

KING SABATA DALINDYEBO LOCAL MUNICIPALITY



BID DOCUMENT FOR:

REHABILITATION OF KING EDWARD STREET

BID NUMBER: SCM: 009/2022/23

BIDDER: _____

BID PRICE (Incl VAT): _____

CLOSING DATE: 25 November 2022 _____

CLOSING TIME: 12H00 _____

CSD SUPPLIER NUMBER _____

PREPARED BY:

SUPPLY CHAIN MANAGEMENT OFFICE
KSD MUNICIPALITY
MUNITATA BUILDING
CORNER SUTHERLAND & OWEN STREET
MTHATHA
5099

Tel: [047] 501 4394

Fax: [047] 531 2085

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**PART A
INVITATION TO BID**

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (King Sabata Dalindyebo Local Municipality)					
BID NUMBER:	SCM NO: 009/2022/23	CLOSING DATE:	25 NOVEMBER 2022	CLOSING TIME:	12h00
DESCRIPTION	REHABILITATION OF KING EDWARD STREET				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE
BID BOX SITUATED AT (STREET ADDRESS)

KSD LOCAL MUNICIPALITY					
MUNITATA BUILDING					
CORNER SUTHERLAND & OWEN STREET					
MTHATHA					
5099					
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	☐ Yes ☐ No	
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES, ANSWER PART B:3]
TOTAL NUMBER OF ITEMS OFFERED		TOTAL BID PRICE	R
SIGNATURE OF BIDDER		DATE	
CAPACITY UNDER WHICH THIS BID IS SIGNED			
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT	SCM	DEPARTMENT	Technical Services
CONTACT PERSON	Mr. N. Zibi	CONTACT PERSON	Ms. S. Nondlazi
TELEPHONE NUMBER	047 501 4118	TELEPHONE NUMBER	047 501 4308
E-MAIL ADDRESS	<u>zibin@ksd.gov.za</u>	E-MAIL ADDRESS	<u>nondlazi@ksd.gov.za</u>

PART B**TERMS AND CONDITIONS FOR BIDDING**

1. BID SUBMISSION:	
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.	
1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED--(NOT TO BE RE-TYPED) OR ONLINE	
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.	
2. TAX COMPLIANCE REQUIREMENTS	
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.	
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.	
2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.	
2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B: 3.	
2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.	
2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.	
2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.	
3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS	
3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐ YES ☐ NO
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.	

**NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.
NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.**

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:



BID NOTICE

King Sabata Dalindyebo Local Municipality hereby calls upon accredited service providers to bid for the following tenders:

No.	Project Name	CIDB Grading	Bid Number	Closing Date	Enquiries
1	Rehabilitation of King Edward Street	6 CE or Higher	SCM: 009/2022/23	Date: 25/11/2022 Time: 12H00	Technical Enquiries may be directed to: Ms S. Nondlazi (Technical Services). Tel: 047 501 4308

Bidders must take note of the following bid conditions:

Place of Tender box: **1st Floor, Munitata Building, Next to Room 147.** All bids must be put in a sealed envelope and clearly marked with SCM Number and Project Name and be placed in a tender box. Tender documents can be downloaded free of charge from the National Treasury's tender portal (<http://www.etenders.gov.za/content/advertised-tenders>) or from the King Sabata Dalindyebo site (www.ksd.gov.za) as from the **25th of October 2022**

NO HARD COPIES OF THE TENDER DOCUMENT ARE AVAILABLE FOR SALE, ONLY THE ELECTRONIC VERSION WHICH IS TO BE DOWNLOADED AS PER THE ABOVE WEBSITES IS TO BE USED.
NO COMPULSORY BRIEFING IS APPLICABLE FOR ALL BIDS

Bidders must take note of the following bid conditions: -

- Failure to submit comprehensive JV agreement (where applicable), failure to do so will result in a tender deemed non-responsive.
- Individual partners of JV are to comply and submit all relevant documents. Failure to do so will result in a tender deemed non-responsive.
- Failure to complete tender forms e.g. MBD 1, MBD 3, MBD 4, MBD 6, MBD 8 and MBD 9 will result in a tender deemed non-responsive.
- Failure to submit or complete supplementary information will result in the tender being null, void and non-responsive.
- All bidders from KSD jurisdiction **must** submit latest municipal statement not older than three months showing that they do not owe the municipality, non KSD bidders must attach proofs not older than three months from their respective municipalities.
- The Council reserves the right to disqualify any service provider whose members and or shareholders owe the municipal rates & taxes.
- The KSD Municipality does not bind itself to accept the lowest or any bid and reserves the right to accept the whole or part of the bid or to withdraw the bid.
- All certified copies submitted with a tender document must not be older than six months, failure to do so will result tender deemed non-responsive.
- All alterations in prices/quotes must be signed for and failure to sign will result in tender deemed non-responsive

- Use of tipex is prohibited and the bidder will be deemed non-responsive.
- The bidder to submit Audited financial statements for the past three financial years for any offer amounting to or exceeding R10 million inclusive of VAT.
- Bidders must sign MBD 5 for any offer amounting or exceeding R10 million.
- Bids submitted will hold good for a period of **90** days.
- Failure to be registered on Central Supplier Database registration will result in a tender being disqualified.
- Bids that are late, incomplete, unsigned or submitted by fax, mail or electronically including copy of a tender document, will not be accepted.
- All bids must be put in a sealed envelope and clearly marked with SCM Number and Project Name and be placed in a tender box; failure to do so the document will not be considered.
- BBBEE must be SANAS and IRBA Approved or Sworn affidavit must be from DTI failure to do so tenderers will lose point.
- Preferential Procurement Policy Framework ACT 2017 (PPPFA) Points will be evaluated based on the following criteria
 - Stage 1 Pre –qualification evaluation
 - Stage 2 Price and BBB EE Points

The tender will be evaluated and adjudicated on the basis of the Preferential Procurement Policy Framework Act, and the regulations pertaining thereto (2017 Regulations), as well as the King Sabata Dalindyebo Municipality's Supply Chain Management policy. The 80/20 preference point system will be used as per the KSDLM SCM policy.

The tender will be evaluated and adjudicated on the basis of SCM bid compliance, functionality and price.

Bidders will have to score a minimum of 70 points out of a maximum of 100 points for functionality in order to proceed to the pricing stage.

SCM related enquiries may be directed to Mr N. Zibi (General Manager: SCM) 047 501 4118

Mr. N. Pakade: Municipal Manager

Date_____

B. SUPPLY CHAIN MANAGEMENT POLICY PREREQUISITES

The King Sabata Dalindyebo Municipality has identified a general set of prerequisites for procurement. Bids will not be considered should the prerequisites not be met.

1.1 GENERAL PREREQUISITES

Introduction

This Section covers a general set of prerequisites that have been identified for supply chain management by the King Sabata Dalindyebo Municipality. All Bidders must submit the information requested below. Pro-forma data sheets can be found in the Annexure. Bidders will not be considered should the prerequisites not be met.

Criteria

- a) Proof of company registration and/or any other form of legal standing must be submitted by all bidders and the company composition form must be completed. See **Annexure "D"**.
- b) The Declaration of Interest form must be completed.
- c) The bid document must be completed in all respects in black ink.
- d) Bids must be submitted on original bid documents.
- e) Bid documents must remain intact and no portion may be detached.

Joint Ventures

- f) A joint venture that is awarded a contract with King Sabata Dalindyebo Municipality must be registered as a separate company with the Registrar of Businesses.
- g) The joint venture must be registered with South African Revenue Services.
- h) A separate bank account must be in place for the joint venture.
- i) A joint venture must submit a joint venture B-BBEE Verification Certificate (if accredited)

Clauses (g) and (h) will only be applicable after the awarding of the contract to the successful bidder.

C. GENERAL CONDITIONS OF BID

1. INTERPRETATION

The word "Bidder" in these conditions shall mean and include any firm of Contractors or any company or body incorporated or unincorporated.

The word "Municipality" in these conditions shall mean the King Sabata Dalindyebo Municipality.

2. EXTENT OF BID

This contract is for – **REHABILITATION OF KING EDWARD STREET**

3. CONTRACT TO BE BINDING

The formal acceptance of this Bid by the Municipality will constitute a contract binding on both parties, and the Municipality may require sureties to its satisfaction from the contractor, for the due fulfilment of this contract.

4. MODE OF BID

All Bids shall be completed and signed: All forms, annexures, addendums and specifications shall be signed and returned with the Bid document as a whole. ***The lowest or any Bid will not necessarily be accepted.***

The Municipality wishes to deal on a prime contractual basis with the successful Bidder being responsible and accountable for all aspects of the entire solution or service offered.

5. QUALITY

Should the specifications and / or descriptions not address any aspects of quality as specified, this should be clarified with the Municipality prior to the submission of a Bid.

6. INSURANCE CLAIMS, ETC.

The Council and Municipality shall not be liable in any manner in respect of any claims, damages, accidents and injuries to persons, property or rights or any other courses of civil or criminal action that may arise from the carrying out of this contract.

The contractor shall insure his / her / their personnel and any plant, machinery or other mechanical or electronic equipment involved in the fulfilment of this contract and shall indemnify the Council and the Municipality against all risks or claims which may arise.

It will be required from the successful Bidder to submit proof of insurance or any other valid form of indemnification to Council for scrutiny. Failure to do so within 14 (fourteen) days of acceptance of this Bid will be deemed to be a material breach of this contract and will render the contract null and void.

7. SIGNING OF DOCUMENTS

Bidders are required to return the complete set of documents duly signed.

8. PERIOD OF VALIDITY FOR BIDS AND WITHDRAWAL OF BID AFTER CLOSING DATE

All Bids must remain valid for a period of 90 (ninety) days from the closing date as stipulated in the Bid document.

8.1 PENALTY PROVISION

Should the successful Bidder:

- [a] Withdraw the Bid during the afore-mentioned period of validity; or
- [b] Advise the Municipality of his / her / their inability to fulfil the contract; or
- [c] Fail or refuse to fulfil the contract; or
- [d] Fail or refuse to sign the agreement or provide any surety if required to do so;

Then, the Bidder will be held responsible for and is obligated to pay to the Municipality:

- [a] All expenses incurred by the Municipality to advertise for or invite and deliberate upon new Bids, should this be necessary.
- [b] The difference between the original accepted Bid price (inclusive of escalation) and:
 - [i] A less favourable (for the Municipality) Bid price (inclusive of escalation) accepted as an alternative by the Municipality from the Bids originally submitted; or
 - [ii] A new Bid price (inclusive of escalation).

9. VALUE ADDED TAX

In calculating the cost of the supply and delivery of services and / or material, the supplier will issue a "Tax Invoice" for all services rendered and / or materials supplied, which will reflect the exclusive cost of such services, goods or materials with the relevant Value Added Tax being added to the total.

VAT must be included in the Bid price but must be shown separately.

10. PRICE ESCALATION

No claim in respect of any price escalation will be considered by the Municipality unless it is specifically stated in the Pricing Annexure that the Bid is subject to price escalation. When escalation is claimed for during the contract period, proof of such escalation must be furnished and the calculation itself must be submitted to corroborate such proof. Escalation will only be calculated on the official index figures supplied by the Department of Statistics or the Price Controller, which ever may be applicable. All orders placed will be based on the current Bid prices. It is the responsibility of the Bidder to inform Council of any escalation prior to implementation of the escalated price. Failure to do so will negate any such claims to Council.

11. AUTHORITY TO SIGN BID DOCUMENTS

In the case of a Bid being submitted on behalf of a company, close corporation or partnership, evidence must be submitted to the Municipality at the time of submission of the Bid that the Bid has been signed by persons properly authorised thereto by resolution of the directors or under the articles of the entity.

12. DURATION OF THE BID

It is envisaged that the successful Bidder will be appointed within 90 days from the closing date and will be required to begin work on the assignment immediately upon appointment. The duration of this Project is a Eleven (11) months period

13. DELIVERY PERIODS

Delivery periods, where indicated must be adhered to. Notwithstanding the termination date of the assignment the bidder will be required to submit progress reports to the Municipality. The contract form, frequency and dates thereof will be stipulated and agreed upon by the parties upon the awarding of the Bid.

14. CLOSING DATE / SUBMITTING OF BIDS

Completed bid documents are to be placed in a sealed envelope endorsed “**SCM NO: 009/2022/23, Rehabilitation of king Edward street**” Must be deposited in the Bid Box, at the offices of the King Sabata Dalindyebo Municipality, Munitata Building Corner Sutherland & Owen Street, Mthatha 5099, not later than **12h00 on Friday, 25 November 2022**, at which time the bids will be opened in public.

Bids which are not submitted in a properly sealed and marked envelope and/or deposited in the relevant bid box on or before the closing date and time will not be considered. Faxed or e-mailed Bids will not be considered.

16. BID AND PROJECT ENQUIRIES

Please refer all SCM enquiries to **Mr. N. Zibi** via e-mail on zibin@ksd.gov.za All Project enquiries to **Ms S. Nondlazi** via e-mail on nondlazis@ksd.gov.za

GENERAL CONDITIONS OF CONTRACT

1. Definitions

The following terms shall be interpreted as indicated:

- 1.1 **“Closing time”** means the date and hour specified in the bidding documents for the receipt of bids.
- 1.2 **“Contract”** means the written agreement entered into between the purchaser and the provider, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.3 **“Contract price”** means the price payable to the provider under the contract for the full and proper performance of his contractual obligations.
- 1.4 **“Corrupt practice”** means the offering, giving, receiving, or soliciting of any thing of the value to influence the action of a public official in the procurement process or in contract execution.
- 1.5 **“Countervailing duties”** are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.
- 1.6 **“Country of origin”** means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 1.7 **“Day”** means calendar day.
- 1.8 **“Delivery”** means delivery in compliance of the conditions of the contract or order.
- 1.9 **“Delivery ex stock”** means immediate delivery directly from stock actually on hand.
- 1.10 **“Delivery into consignees store or to his site”** means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the provider bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.
- 1.11 **“Dumping”** occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.
- 1.12 **“Force majeure”** means an event beyond the control of the provider and not involving the provider's fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 1.13 **“Fraudulent practice”** means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.
- 1.14 **“GCC”** means the General Conditions of Contract.
- 1.15 **“Goods”** means all of the equipment, machinery, and/or other materials that the provider is required to supply to the purchaser under the contract.

- 1.16 **“Imported content”** means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the provider or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as land costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.
- 1.17 **“Local content”** means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.
- 1.18 **“Manufacture”** means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.
- 1.19 **“Order”** means an official written order issued for the supply of goods or works or the rendering of a service.
- 1.20 **“Project site,”** where applicable, means the place indicated in bidding documents.
- 1.21 **“Purchaser”** means the organization purchasing the goods.
- 1.22 **“Republic”** means the Republic of South Africa.
- 1.23 **“SCC”** means the Special Conditions of Contract.
- 1.24 **“Services”** means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the provider covered under the contract.
- 1.25 **“Written”** or **“in writing”** means hand-written in ink or any form of electronic or mechanical writing.

2. Application

- 2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services (excluding professional services related to the building and construction industry), sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise in the bidding documents.
- 2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.
- 2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

- 3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.
- 3.2 Invitations to bid are usually published in locally distributed news media and in the institution's website.

4. Standards

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

5. Use of contract documents and information; inspection

5.1 The provider shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the provider in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

5.2 The provider shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the provider's performance under the contract if so required by the purchaser.

5.4 The provider shall permit the purchaser to inspect the provider's records relating to the performance of the provider and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1 The provider shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of goods or any part thereof by the purchaser.

6.2 When a provider developed documentation/projects for the municipality or municipal entity, the intellectual, copy and patent rights or ownership or such documents or projects will vest in the municipality or municipal entity.

7. Performance security

7.1 Within fourteen (14) days of receipt of the notification of contract award, the success bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the provider's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

- (a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or
- (b) a cashier's or certified cheque.

7.4 The performance security will be discharged by the purchaser and returned to the provider not later than thirty (30) days following the date of completion of the provider's performance obligations under the contract, including any warranty obligations, unless otherwise specified.

8. Inspections, tests and analyses

8.1 All pre-bidding testing will be for the account of the bidder.

- 8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the purchaser or an organization acting on behalf of the purchaser.
- 8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.
- 8.4 If the inspections, tests and analyses referred to in clause 8.2 & 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.
- 8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the provider.
- 8.6 Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.
- 8.7 Any contract supplies may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the provider who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do not comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the providers cost and risk. Should the provider fail to provide the substitute supplies forthwith, the purchaser may, without giving the provider further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the provider.
- 8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packaging

- 9.1 The provider shall provide such packaging of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging, case size and weights shall take into consideration, where appropriate, the remoteness of the good's final destination and the absence of heavy handling facilities at all points in transit.
- 9.2 The packaging, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

- 10.1 Delivery of the goods and arrangements for shipping and clearance obligations shall be made by the provider in accordance with the terms specified in the contract.

11. Insurance

- 11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified.

12. Transportation

- 12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified.

13. Incidental services

- 13.1 The provider may be required to provide any or all of the following services, including additional services, if any:
- (a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;
 - (b) furnishing of tools required for assembly and/or maintenance of the supplied goods;
 - (c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
 - (d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the provider of any warranty obligations under this contract; and
 - (e) training of the purchaser's personnel, at the provider's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.
- 13.2 Prices charged by the provider for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the provider for similar services.
14. **Spare parts**
- 14.1 As specified, the provider may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the provider:
- (a) such spare parts as the purchaser may elect to purchase from the provider, provided that this election shall not relieve the provider of any warranty obligations under the contract, and
 - (b) in the event of termination of production of the spare parts:
 - (i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
 - (ii) Following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

- 15.1 The provider warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The provider further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the provider, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.
- 15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for

eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise.

15.3 The purchaser shall promptly notify the provider in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the provider shall, within the period specified and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the provider, having been notified, fails to remedy the defect(s) within the period specified, the purchaser may proceed to take such remedial action as may be necessary, at the provider's risk and expense and without prejudice to any other rights which the purchaser may have against the provider under the contract.

16. **Payment**

16.1 The method and conditions of payment to be made to the provider under this contract shall be specified

16.2 The provider shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the provider.

16.4 Payment will be made in Rand unless otherwise stipulated.

17. **Prices**

17.1 Prices charged by the provider for goods delivered and services performed under the contract shall not vary from the prices quoted by the provider in his bid, with the exception of any price adjustments authorized or in the purchaser's request for bid validity extension, as the case may be.

18. **Increase/decrease of quantities**

18.1 In cases where the estimated value of the envisaged changes in purchase does not exceed 15% of the total value of the original contract, the contractor may be instructed to deliver the revised quantities. The contractor may be approached to reduce the unit price, and such offers may be accepted provided that there is no escalation in price.

19. **Contract amendments**

19.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

20. **Assignment**

20.1 The provider shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

21. **Subcontracts**

21.1 The provider shall notify the purchaser in writing of all subcontracts awarded under this contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the provider from any liability or obligation under the contract.

22. **Delays in the provider's performance**

- 22.1 Delivery of the goods and performance of services shall be made by the provider in accordance with the time schedule prescribed by the purchaser in the contract.
- 22.2 If at any time during performance of the contract, the provider or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the provider shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the provider's notice, the purchaser shall evaluate the situation and may at his discretion extend the provider's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.
- 22.3 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if any emergency arises, the provider's point of supply is not situated at or near the place where the supplies are required, or the provider's services are not readily available.
- 22.4 Except as provided under GCC Clause 25, a delay by the provider in the performance of its delivery obligations shall render the provider liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.
- 22.5 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without canceling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the provider's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the provider.

23. Penalties

- 23.1 Subject to GCC Clause 25, if the provider fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed good or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

24. Termination for Default

- 24.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the provider, may terminate this contract in whole or in part:
- (a) if the provider fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;
 - (b) if the provider fails to perform any other obligation(s) under the contract; or
 - (c) if the provider, in the judgement of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
- 24.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the provider shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the provider shall continue performance of the contract to the extent not terminated.

25. Anti-Dumping and Counter-Vailing Duties and Rights

25.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the provider to the purchaser or the purchaser may deduct such amounts from moneys (if any) which may otherwise be due to the provider in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

26. Force Majeure

26.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the provider shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

26.2 If a force majeure situation arises, the provider shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the provider shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

27. Termination for Insolvency

27.1 The purchaser may at any time terminate the contract by giving written notice to the provider if the provider becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the provider, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser,

28. Settlement of Disputes

28.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the provider in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

28.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the provider may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

28.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

28.4 Notwithstanding any reference to mediation and / or court proceedings herein,

- (a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
- (b) the purchaser shall pay the provider any monies due to the provider for goods delivered and / or services rendered according to the prescripts of the contract.

29. Limitation of Liability

29.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 6;

- (a) the provider shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the provider to pay penalties and / or damages to the purchaser; and
- (b) the aggregate liability of the provider to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

30. Governing Language

- 30.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

31. Applicable Law

- 31.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified.

32. Notices

- 32.1 Every written acceptance of a bid shall be posted to the provider concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.
- 32.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

33. Taxes and Duties

- 33.1 A foreign provider shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.
- 33.2 A local provider shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.
- 33.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid SARS must have certified that the tax matters of the preferred bidder are in order.

34. Transfer of Contracts

- 34.1 The contractor shall not abandon, transfer, assign or sublet a contract or part thereof without the written permission of the purchaser.

35. Amendment of Contracts

- 35.1 No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force unless such agreement to amend or vary is entered into in writing and signed by the contracting parties. Any waiver of the requirement that the agreement to amend or vary shall be in writing, shall also be in writing.

D. SPECIFICATION & EVALUATION CRITERIA

SCOPE OF WORK: REHABILITATION OF KING EDWARD STREET

It is the intention of the KSD Local Municipality to enter into a formal contract with a service provider that will carry out the services described hereunder.

SECTION 1: DETAILS

Province:	Eastern Cape
Municipality:	KSD Local Municipality
Department	Technical Services
Project Name:	Rehabilitation of King Edward Street
SCM number:	009/2022/23
Project Manager:	Ms. S. Nondlazi
Evaluation criteria:	80/20

SECTION 2: BACKGROUND INFORMATION

KSD Municipality is in process of accelerating the provision of sustainable roads infrastructure to the communities KSDM. Appointment of the Contractor for the execution of this projects is crucial for the Municipality.

SECTION 3: OBJECTIVES AND OUTPUTS

The objective of the employer is to improve service delivery by providing expected Municipal services to meet its Constitutional Mandate. This contract seeks to appoint a Contractor for the Rehabilitation of King Edward Street.

SECTION 4: DELIVERABLES

King Edward Street (850m):

- Rip and spoil existing depleted blacktop surfacing.
- Box cut the existing pavement layers and construction of G7 selected layer.
- Construction of 150mm G2 base.

- Construction of 150mm G5 subbase.
- Import new 40mm asphalt surfacing.
- Construction of piped stormwater system.
- Install new road signs and lane marking.
- Install concrete cutter slabs at affected entrances.
- Upgrading of the existing streetlights.
- Construction of Sidewalk.

Ivory Street and Portion of Craister Street (200m)

- General maintenance by cleaning of stormwater drainage system.
- Lane Marking.
- Upgrading of the existing streetlights.

Connecting Street one (100m)

- Pothole patching and asphalt overlay.
- Upgrading of the existing streetlights.

General maintenance by cleaning of stormwater drainage system.

SECTION 5: TIME FRAMES

Eleven (11) Months

SECTION 6: SPECIAL CONDITIONS

Please list special conditions

Only contractors with active CIDB Grading of 6 CE or higher

SECTION 7: CRITERIA FOR EVALUATION OF PROPOSALS

In order to be considered for a contract in terms of this Bid, Bidders must achieve the minimum score for quality as stated below.

The description of the quality criteria and the maximum possible score for each is shown in the table below. The score achieved for quality will be the sum of the scores achieved for the individual criteria.

QUALITY CRITERIA		Maximum no of Points
Company Experience		40
Expertise		40
Methodology		20
Maximum possible score for quality		100

Stage 1: Point allocated for Functionality

Only bidders who score a minimum of **70 Points** out of **100 points** for functionality will be invited further for pricing and preference scoring.

A more detailed explanation of the quality criteria is given below:

Scoring criteria	Points allocation	Maximum Points to be scored
Experience = 40 Points		
Confirmed Experience of firm in similar Upgrading of Gravel Road to Surface Road minimum of 4 projects (attach relevant appointment letters, completion certificates and reference letters)	10 points per Similar Project	40
10 points can be scored for each similar project. (Maximum of 40 points can be awarded).		
Past experience of the company in similar projects exceeding total of R10m completed by the Bidder with contactable references.		

Scoring criteria	Points allocation	Points Distribution	Maximum Points to be scored
Expertise = 40 Points			
Experience of the key staff assessed using years of Experience post Academic Qualification. The CV and certified copies of Academic Qualifications of the proposed key staff must be submitted under “Returnable Documents”. The bidder must ensure that the minimum qualification	Contracts Manager (CM) – Min Qualification (B-Tech/Advanced Diploma – Built Environment)		
	If CM has 7 years’ experience and has completed similar projects	20	20
	If CM has 5 years’ experience and has completed similar projects	15	
	If CM has 3 years’ experience and has completed similar projects	10	
	If CM has NO Min Qualification or has NOT completed similar	0	

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projections

Points for clearly explaining the design methodology

Stage 2: Point allocated for Price and Preference Point System

In order to claim the B-BBEE Status Level of Contributor points, bidders must submit original and valid B-BBEE Status Level Verification Certificates or certified copies thereof, issued by accredited Verification Agency/s by SANAS or Registered Auditor approved by Independent Regulatory Board of Auditor (IRBA), together with their bids to substantiate their B-BBEE rating claims. The Exempted Micro Enterprise must submit a letter from the Accounting Officer who is appointed in terms of Close Corporation Act. EMEs are allowed to submit a sworn affidavit obtainable from the Department of Trade and Industry website.

Bidders who do not submit B-BBEE Status Level Verification Certificates or are non-compliant contributors to B-BBEE will not qualify for preference points for B-BBEE but will not be disqualified from the bidding process. They will score points for price and zero (0) points out of 20 for B-BBEE.

Points Awarded for Price (Ps)

A total of 80 points will be awarded to the Tenderer with the lowest balanced price. The other tenders will be awarded points on the ratio to bench mark price as follows:

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

Ps = Points scored for price of bid under consideration;
 Pt = Price of tender under consideration; and
 Pmin = Price of lowest acceptable tender.

PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT (PPPFA) POINTS WILL BE AWARDED AS FOLLOWS

Functionality	-	80 points
B-BBEE Status Level	-	20 points
TOTAL	-	100 points

ALLOCATION OF POINTS FOR BBEE

B-BBEE Status Level Contributor	Number of Points
1	20
2	18
3	14
4	12
5	8
6	6

7	4
8	2
Non-compliant contributor	0
Failure to comply with these conditions may invalidate your offer Preferential Procurement Policy, 2017, Regulation 9(2)(1) and Regulation (i)(3) will be applied for selecting a subcontractor.	

Bidders should take note of the above Pre-qualification criteria.

- [a] All the necessary documentation must be submitted for the Evaluation Panel to make an informed evaluation. Evaluation of the Technical (Quality) Requirements will be based on the information provided by the bidder.
 - [i] **Experience** - The experience annexure must be completed. Only list projects of a similar nature undertaken in Wellness Program
 - [ii] **Expertise** – The qualifications and capacity of the company/team to undertake the work must be provided for evaluation purposes.
 - [iii] **Methodology** – The bidder must clearly demonstrate how the contract will be managed, detailing a work plan with time frames and clearly explaining how the works will be implemented.
- [b] Bids that do not meet a minimum of **70 points** out of 100 in total for the criteria listed above will not be considered further.

E. LIST OF ANNEXURES**MBD 2****TAX CLEARANCE CERTIFICATE REQUIREMENTS**

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

- 1 In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.
- 2 SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.
- 3 The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
- 4 In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.
- 5 Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.
- 6 Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

MBD 3.1

PRICING SCHEDULE
(Professional Services)

Name of Bidder:.....	Bid Number:
Closing Time:	Closing Date

OFFER TO BE VALID FOR 90 DAYS FROM THE CLOSING DATE OF BID.

ITEM NO ADDED TAX	DESCRIPTION	BID PRICE IN RSA CURRENCY INCLUSIVE OF VALUE
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1. The accompanying information must be used for the formulation of proposals.

2. Bidders are required to indicate a ceiling price based on the total estimated time for completion of all phases and including all expenses inclusive of VAT for the project.

R

3. PERSONS WHO WILL BE INVOLVED IN THE PROJECT AND RATES APPLICABLE (CERTIFIED INVOICES MUST BE RENDERED IN TERMS HEREOF)

4. PERSON AND POSITION	HOURLY RATE	DAILY RATE
-----	R-----	-----
-----	R-----	-----
-----	R-----	-----
-----	R-----	-----
-----	R-----	-----

5. PHASES ACCORDING TO WHICH THE PROJECT WILL BE COMPLETED, COST PER PHASE AND MAN-DAYS TO BE SPENT

-----	R-----	----- days
-----	R-----	----- days
-----	R-----	----- days
-----	R-----	----- days

- 5.1 Travel expenses (specify, for example rate/km and total km, class of air travel, etc). Only actual costs are recoverable. Proof of the expenses incurred must accompany certified invoices.

DESCRIPTION OF EXPENSE TO BE INCURRED	RATE	QUANTITY	AMOUNT
.....			R.....
.....			R.....
.....			R.....
.....			R.....
TOTAL: R.....			

- 5.2 Other expenses, for example accommodation (specify, e.g. Three star hotel, bed and breakfast, telephone cost, reproduction cost, etc.). On basis of these particulars, certified invoices will be checked for correctness. Proof of the expenses must accompany invoices.

DESCRIPTION OF EXPENSE TO BE INCURRED	RATE	QUANTITY	AMOUNT
.....			R.....
.....			R.....
.....			R.....
.....			R.....
TOTAL: R.....			

6. Period required for commencement with project after Acceptance of bid
.....

7. Estimated man-days for completion of project
.....

8. Are the rates quoted firm for the full period of contract?
.....

9. If not firm for the full period, provide details of the basis on which adjustments will be applied for, for example consumer price index.
.....
.....
.....
.....

MBD 4**DECLARATION OF INTEREST**

1. No bid will be accepted from persons in the service of the state*.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.
3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Full Name:.....

3.2 Identity Number:.....

3.3 Company Registration Number:

3.4 Tax Reference Number:.....

3.5 VAT Registration Number:.....

3.6 Are you presently in the service of the state* **YES / NO**

3.6.1 If so, furnish particulars.

.....

.....

3.7 Have you been in the service of the state for the past twelve months? **YES / NO**

3.7.1 If so, furnish particulars.

* MSCM Regulations: "in the service of the state" means to be –

- (a) a member of –
 - (i) any municipal council;
 - (ii) any provincial legislature; or
 - (iii) the national Assembly or the national Council of provinces;
- (b) a member of the board of directors of any municipal entity;
- (c) an official of any municipality or municipal entity;
- (d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
- (e) a member of the accounting authority of any national or provincial public entity; or
- (f) an employee of Parliament or a provincial legislature.

- 3.8 Do you, have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

YES / NO

- 3.8.1 If so, furnish particulars.

.....
.....

- 3.9 Are you, aware of any relationship (family, friend, other) between a bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?

YES / NO

- 3.9.1 If so, furnish particulars

.....
.....

- 3.9 Are any of the company's directors, managers, principal Shareholders or stakeholders in service of the state?

YES / NO

- 3.10.1 If so, furnish particulars.

.....
.....

- 3.11 Are any spouse, child or parent of the company's directors, managers, principal shareholders or stakeholders in service of the state?

YES / NO

- 3.11.1 If so, furnish particulars.

.....
.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.
I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

MBD 5**DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)**

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire:

1 Are you by law required to prepare annual financial statements for auditing?

***YES / NO**

1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.

.....
.....

2 Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

***YES / NO**

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

.....
.....
.....
.....

* Delete if not applicable

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material noncompliance or dispute concerning the execution of such contract?

***YES / NO**

3.1 If yes, furnish particulars

.....
.....

4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be

***YES /**

NO

transferred out of the Republic?

4.1 If yes, furnish particulars

.....
.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.
I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE
FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

MBD 6.1**PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017**

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of R 30 000.00 up to R 50 000 000.00 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated NOT to exceed R50 000 000.00 (all applicable taxes included) and therefore the 80/20 system shall be applicable.

1.3 Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contribution.

1.3.1 The maximum points for this bid are allocated as follows:

	POINTS
1.3.1.1 PRICE	80
1.3.1.2 B-BBEE STATUS LEVEL OF CONTRIBUTION	20.
Total points for Price and B-BBEE must not exceed	<u>100</u>

1.4 Failure on the part of a bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS) or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an Accounting Officer as contemplated in the Close Corporation Act (CCA) together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.5 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- 2.1 **“all applicable taxes”** includes value-added tax, pay as you earn, income tax, unemployment insurance Fund contributions and skills development levies;
- 2.2 **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- 2.3 **“B-BBEE status level of contributor”** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- 2.4 **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- 2.5 **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- 2.6 **“comparative price”** means the price after the factors of a non-firm price and all unconditional discounts that can be utilized have been taken into consideration;
- 2.7 **“consortium or joint venture”** means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract;
- 2.8 **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- 2.9 **“EME”** means any enterprise with an annual total revenue of R5 million or less.
- 2.10 **“Firm price”** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;
- 2.11 **“functionality”** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;
- 2.12 **“non-firm prices”** means all prices other than “firm” prices;
- 2.13 **“person”** includes a juristic person;
- 2.14 **“rand value”** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;
- 2.15 **“sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;
- 2.16 **“total revenue”** bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based

Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007;

- 2.17 **“trust”** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- 2.18 **“trustee”** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

3. ADJUDICATION USING A POINT SYSTEM

- 3.1 The bidder obtaining the highest number of total points will be awarded the contract.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;.
- 3.3 Points scored must be rounded off to the nearest 2 decimal places.
- 3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.
- 3.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

4. POINTS AWARDED FOR PRICE

4.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 or 90/10

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

Ps = Points scored for comparative price of bid under consideration

Pt = Comparative price of bid under consideration

P_{min} = Comparative price of lowest acceptable bid

5. Points awarded for B-BBEE Status Level of Contribution

- 5.1 In terms of Regulation 5 (2) and 6 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
------------------------------------	---------------------------------	---------------------------------

1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

- 5.2 Bidders who qualify as EMEs in terms of the B-BBEE Act must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates.
- 5.3 Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- 5.4 A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.
- 5.5 A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.
- 5.6 Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 5.7 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 5.8 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.

6. BID DECLARATION

- 6.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

7. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.3.1.2 AND 5.1

- 7.1 B-BBEE Status Level of Contribution: =(maximum of 10 or 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or an Accounting Officer as contemplated in the CCA).

8 SUB-CONTRACTING

8.1 Will any portion of the contract be sub-contracted? YES / NO (delete which is not applicable)

8.1.1 If yes, indicate:

- (i) what percentage of the contract will be subcontracted?%
- (ii) the name of the sub-contractor?
- (iii) the B-BBEE status level of the sub-contractor?
- (iv) whether the sub-contractor is an EME? YES / NO (delete which is not applicable)

9 DECLARATION WITH REGARD TO COMPANY/FIRM

9.1 Name of firm :

9.2 VAT registration number :

9.3 Company registration number :

:

9.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

.....

.....

9.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
 - ☐ Supplier
 - ☐ Professional service provider
 - ☐ Other service providers, e.g. transporter, etc.
- [TICK APPLICABLE BOX]

9.7 MUNICIPAL INFORMATION

Municipality where business is situated

Registered Account Number

Stand Number

9.8 TOTAL NUMBER OF YEARS THE COMPANY/FIRM HAS BEEN IN BUSINESS?

9.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- (i) The information furnished is true and correct;
- (ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.
- (iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 7, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- (iv) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution

WITNESSES:

1.

2.

.....
SIGNATURE(S) OF BIDDER(S)

DATE:.....

ADDRESS:

.....

.....

.....
.....
.....

MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SUCCESSFUL BIDDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SUCCESSFUL BIDDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution) **King Sabata Dalindyebo Municipality** in accordance with the requirements and specifications stipulated in bid number **009/2022/23** at the price/s quoted. My offer/s remains binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.
2. The following documents shall be deemed to form and be read and construed as part of this agreement:
 - (i) Bidding documents, viz
 - Invitation to bid;
 - Pricing schedule(s);
 - Technical Specification(s);
 - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2017;
 - Declaration of interest;
 - Declaration of bidder's past SCM practices;
 - Certificate of Independent Bid Determination;
 - Special Conditions of Contract;
 - (ii) General Conditions of Contract; and
 - (iii) Other (specify)
3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.
4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.
5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.
6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT)

CAPACITY

SIGNATURE

NAME OF FIRM

DATE

WITNESSES

1

2.

DATE :.....

MBD 7.2**CONTRACT FORM - PURCHASE OF GOODS/WORKS****PART 2 (TO BE FILLED IN BY THE PURCHASER)**

1. I.....in my capacity as..... accept your bid under reference numberdated.....for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).
2. An official order indicating delivery instructions is forthcoming.
3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

ITEM NO.	PRICE (ALL APPLICABLE TAXES INCLUDED)	<u>BRAND</u>	DELIVERY PERIOD	B-BBEE STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)

4. I confirm that I am duly authorized to sign this contract.

SIGNED ATON.....

NAME (PRINT)

SIGNATURE

OFFICIAL STAMP

WITNESSES

1.

2.

DATE

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - b. been convicted for fraud or corruption during the past five years;
 - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? <u>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</u> <u>The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.</u>	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? he Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
Item	Question	Yes	No
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		

4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

MBD 9**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

- 1 This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
- 4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

¹ Includes price quotations, advertised competitive bids, limited bids and proposals.

² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

MBD 9**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _____ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

- (a) has been requested to submit a bid in response to this bid invitation;
- (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
- (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.

6. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

- (a) prices;
- (b) geographical area where product or service will be rendered (market allocation)
- (c) methods, factors or formulas used to calculate prices;
- (d) the intention or decision to submit or not to submit, a bid;

(e) the submission of a bid which does not meet the specifications and conditions of the bid;
or

(f) bidding with the intention not to win the bid.

7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

8. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

ANNEXURE A.1
PAST EXPERIENCE WITH OTHER INSTITUTIONS

Bidders must furnish hereunder details of similar work/service, which they have satisfactorily completed in the past. The information shall include a description of the Work, the Contract value, name of Employer and Employer's contact details.

EMPLOYER	NATURE OF WORK	VALUE OF WORK	DURATION AND COMPLETION DATE	EMPLOYER CONTACT NO.

.....
DATE

.....
SIGNATURE OF BIDDER

ANNEXURE A.2
PAST EXPERIENCE WITH KING SABATA DALINDYEBO MUNICIPALITY

Bidders must furnish hereunder details of similar work/service, which they have satisfactorily completed in the past. The information shall include a description of the Work and the Contract value.

PREVIOUS AND/OR CURRENT PROJECTS UNDERTAKEN FOR KING SABATA DALINDYEBO MUNICIPALITY			
PROJECT NAME	AWARDED AMOUNT	CONTRACT START DATE	ANTICIPATED / ACTUAL COMPLETION DATE

.....
DATE.....
SIGNATURE OF BIDDER

**ANNEXURE B
COMPANY DETAILS**

The following company details schedule must be completed to ensure that the prerequisite requirements to bidding are met. Also attach the copy of the company registration certificate in order to qualify for bidding.

Registered Company Name:

.....

Company Registration Number:

VAT Number:

Bank Name and Branch:

Bank Account Number:

Professional Registration Details:

.....

.....

.....

.....

Professional Indemnity Details:

.....

.....

ANNEXURE C
JOINT VENTURE DISCLOSURE FORM

GENERAL

- i) All the information requested must be filled in the spaces provided. If additional space is required, additional sheets may be used and attached to the original documents.
- ii) A copy of the joint venture agreement must be attached to this form, in order to demonstrate the Affirmable, Joint Venture Partner's share in the ownership, control, management responsibilities, risks and profits of the joint venture, the proposed joint venture agreement must include specific details relating to:
 - a) the contributions of capital and equipment
 - b) work items to be performed by the Affirmable Joint Venture Partner's own forces
 - c) work items to be performed under the supervision of the Affirmable Joint Venture Partner.
- iii) Copies of all written agreements between partners concerning the contract must be attached to this form including those, which relate to ownership options and to restrictions/limits regarding ownership and control.
- iv) ABE partners must complete ABE Declaration Affidavits.
- v) The joint venture must be formalised. All pages of the joint venture agreement must be signed by all the parties concerned. A letter/ notice of intention to formalise a joint venture once the contract has been awarded will not be considered.
- vi) Should any of the above not be complied with, the joint venture will be deemed null and void and will be considered non-responsive.
- vii) A joint venture that is awarded a contract with KING SABATA DALINDYEBO MUNICIPALITY must be registered as a separate company with the Registrar of Businesses.
- viii) The joint venture must be registered with South African Revenue Services.
- ix) A separate bank account must be in place for the joint venture.

1. JOINT VENTURE PARTICULARS

- a) Name
- b) Postal address
.....
.....

c) Physical address

.....

.....

d) Telephone

e) Fax

2. IDENTITY OF EACH NON-AFFIRMABLE JOINT VENTURE PARTNER

2.1(a) Name of Firm

Postal Address

Physical Address

Telephone.....

Fax.....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

2.2(a) Name of Firm

Postal Address

Physical Address

Telephone.....

Fax.....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

(Continue as required for further non-Affirmable Joint Venture Partners)

3. IDENTITY OF EACH AFFIRMABLE JOINT VENTURE PARTNER

3.1(a) Name of Firm.....
Postal Address
Physical Address
Telephone.....
Fax.....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

3.2(a) Name of Firm.....
Postal Address
Physical Address
Telephone.....
Fax.....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

3.3(a) Name of Firm.....
Postal Address
Physical Address
Telephone.....
Fax.....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

4. BRIEF DESCRIPTION OF THE ROLES OF THE AFFIRMABLE JOINT VENTURE PARTNERS IN THE JOINT VENTURE

.....

.....

.....

5. OWNERSHIP OF THE JOINT VENTURE

- a) Affirmable Joint Venture Partner ownership percentage(s)%
- b) Non-Affirmable Joint Venture Partner ownership percentage(s)%
- c) Affirmable Joint Venture Partner percentages in respect of : *
- (i) Profit and loss sharing
- (ii) Initial capital contribution in Rands
-
-

(*Brief descriptions and further particulars should be provided to clarify percentages).

- (iii) Anticipated on-going capital contributions in Rands
-
-
-
- (iv) Contributions of equipment (specify types, quality, and quantities of equipment) to be provided by each partner.
-
-
-

6. RECENT CONTRACTS EXECUTED BY PARTNERS IN THEIR OWN RIGHT AS PRIME CONTRACTORS OR AS PARTNERS IN OTHER JOINT VENTURES

NO	NON-AFFIRMABLE JOINT VENTURE PARTNERS	PARTNER NAME
a)		
b)		
c)		
d)		
e)		

NO	AFFIRMABLE JOINT VENTURE PARTNERS	PARTNER NAME
a)		
b)		
c)		
d)		
e)		

7. CONTROL AND PARTICIPATION IN THE JOINT VENTURE

(Identify by name and firm those individuals who are, or will be, responsible for, and have authority to engage in the relevant management functions and policy and decision making, indicating any limitations in their authority e.g. co-signature requirements and Rand limits).

(a) Joint Venture cheque signing

.....

(b) Authority to enter into contracts on behalf of the Joint Venture

.....

(c) Signing, co-signing and/or collateralising of loans

.....

(d) Acquisition of lines of credit

.....

-
- (e) Acquisition of performance bonds
-
-

-
- (f) Negotiating and signing labour agreements
-
-
-

8. MANAGEMENT OF CONTRACT PERFORMANCE
(Fill in the name and firm of the responsible person).

- (a) Supervision of field operations
-

- (b) Major purchasing
-

- (c) Estimating
-

- (d) Technical management
-

9. MANAGEMENT AND CONTROL OF JOINT VENTURE

- (a) Identify the “managing partner”, if any,
-
-
-
-

- (b) What authority does each partner have to commit or obligate the other to financial institutions, insurance companies, suppliers, subcontractors and/or other parties participating in the execution of the contemplated works?

.....

.....

.....

.....

- (c) Describe the management structure for the Joint Venture's work under the contract

MANAGEMENT FUNCTION / DESIGNATION	NAME	PARTNER*

(Fill in "ex Affirmable Joint Venture Partner" or "ex non-Affirmable Joint Venture Partner".

10. **PERSONNEL**

- (a) State the approximate number of operative personnel (by trade/function/discipline) needed to perform the Joint Venture work under the Contract.

TRADE/FUNCTION/ DISCIPLINE	NUMBER EX AFFIRMABLE JOINT VENTURE PARTNERS	NUMBER EX NON- AFFIRMABLE JOINT VENTURE PARTNERS

(Fill in "ex Affirmable Joint Venture Partner" or "ex non-Affirmable Joint Venture Partner").

- (b) Number of operative personnel to be employed on the Contract who are currently in the employ of partners.
- (i) Number currently employed by Affirmable Joint Venture Partners
.....
- (ii) Number currently employed by the Joint Venture
.....
- (c) Number of operative personnel who are not currently in the employ of the respective partner and will be engaged on the project by the Joint Venture
.....
- (d) Name of individual(s) who will be responsible for hiring Joint Venture employees
.....
.....
- (e) Name of partner who will be responsible for the preparation of Joint Venture payrolls
.....
.....

11. **CONTROL AND STRUCTURE OF THE JOINT VENTURE**

Briefly describe the manner in which the Joint Venture is structured and controlled.

.....
.....
.....
.....
.....

The undersigned warrants that he/she is duly authorised to sign this Joint Venture Disclosure Form and affirms that the foregoing statements are true and correct and include all material information necessary to identify and explain the terms and operations of the Joint Venture and the intended participation of each partner in the undertaking.

The undersigned further covenants and agrees to provide the Employer with complete and accurate information regarding actual Joint Venture work and the payment therefore, and any proposed changes in any provisions of the Joint Venture agreement, and to permit the audit and examination of the books, records and files of the Joint Venture, or those of each partner relevant to the Joint Venture, by duly authorised representatives of the Employer.

Signature.....

Duly authorised to sign on behalf of

Name.....

Address

Telephone

Date

Signature.....

Duly authorised to sign on behalf of

Name.....

Address

Telephone

Date

Signature.....

Duly authorised to sign on behalf of

Name.....

Address

Telephone

Date

Signature.....

Duly authorised to sign on behalf of

Name

Address

Telephone

Date

(Continue as necessary)

ANNEXURE D COMPANY COMPOSITION

GENERAL

All information must be filled in spaces provided. If additional space is required, additional sheets may be attached. The onus is on the bidder to fill in all the information. Failure to do so will result in points being lost under equity. The full company composition is required including HDI and Non-HDI status. The ownership must accumulate to 100%.

NAME	IDENTITY NUMBER	CITIZENSHI P	HISTORICALLY DISADVANTAGED INDIVIDUALS STATUS (Y/N)	DISABILITY	FEMALE	DATE OF OWNERSHIP	% OWNED	VOTING %

ANNEXURE E
DECLARATION OF INTERESTS (KINSHIP, RELATIONSHIP WITH PERSONS EMPLOYED BY KING SABATA DALINDYEBO MUNICIPALITY)

In terms of the Municipal Supply Chain Management Regulations, no person or persons employed by the State may be awarded a bid by any municipality.

Any legal person, or persons having a kinship with persons employed by the KING SABATA DALINDYEBO MUNICIPALITY including a blood relationship, may make an offer in terms of this bid invitation. In view of possible allegations of favouritism, should the resulting bid or part thereof be awarded to persons connected with or related to an employee of KING SABATA DALINDYEBO MUNICIPALITY, it is required that the bidder or his/her authorized representative declare his position vis-à-vis the evaluating authority and/or take an oath declaring his/her interest, where—

- the legal person on who's behalf the bid document is signed, has a relationship with persons/a person who are/is involved with the evaluation of the bid(s), or where it is known that such a relationship exists between the person or persons for or on who's behalf the declarer acts and persons who are involved with the evaluation of the bid.

In order to give effect to the above, the following questionnaire shall be completed and submitted with the bid.

Do you, or any person have any relationship (family, friend, other) with a person employed with the KING SABATA DALINDYEBO MUNICIPALITY or its King Sabata Dalindyebo Municipality administration and who may be involved with the evaluation, preparation and/or adjudication of this bid?

Yes/No

If so, state particulars

Are you or any other person connected with the bid, employed by any organ of State?

Yes/No

If so, state particulars

SIGNATURE OF DECLARER

DATE

POSITION OF DECLARER

NAME OF COMPANY OR BIDDER

ANNEXURE F
DECLARATION (VALIDITY OF INFORMATION PROVIDED)

I.....declare that the information provided is true and correct, the signature to the bid document is duly authorised and documentary proof regarding any bidding issue will, when required, be submitted to the satisfaction of the King Sabata Dalindyebo Municipality.

.....
SIGNATURE OF DECLARER

.....
DATE

.....
POSITION OF DECLARER

.....
**NAME OF COMPANY OF
BIDDER**

Should the bidder have, in the opinion of the KING SABATA DALINDYEBO MUNICIPALITY, acted fraudulently illegally, in bad faith or in any improper manner, misrepresented itself with regard to the bid, then the KING SABATA DALINDYEBO MUNICIPALITY may, in its sole discretion:

- * Ignore any bids without advising the bidder thereof
- * Cancel the contract without prejudice to any legal rights the KING SABATA DALINDYEBO MUNICIPALITY may have

Should the bidder disregard this or conduct affairs in a way that transgresses from good business practices, this could seriously impair future business relations between the KING SABATA DALINDYEBO MUNICIPALITY and such bidder.

ANNEXURE G: THE CONTRACT (SPECIAL CINDITIONS)**THE CONTRACT**

PART C1	:	AGREEMENT AND CONTRACT DATA
PART C2	:	PRICING DATA
PART C3	:	PROJECT SPECIFICATION

PART C1: AGREEMENT AND CONTRACT DATA

TABLE OF CONTENTS

C1.1	Form of Offer and Acceptance
C1.2	Contract Data
C1.3	Form of Guarantee
C1.4	Occupational Health and Safety Agreement

C1.1: FORM OF OFFER AND ACCEPTANCE

1. OFFER

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

CONTRACT NO.: SCM 009/2022/23

REHABILITATION OF KING EDWARD STREET

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the tender schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the Contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

The offered total of the prices inclusive of Value-Added Tax is

.....

 Rand (in words); R..... (in figures)

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in terms of the conditions of contract identified in the contract data.

Signature(s)

Name(s)

Capacity

for the **Tenderer**
 (Name and address of organization)

Name and signature
 of witness Date

2. ACCEPTANCE

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract are contained in

Part C1: Agreements and contract data (which includes this agreement)

Part C2: Pricing data

Part C3: Scope of work

Part C4: Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto, as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The tenderer shall, within two weeks after receiving a completed copy of this agreement including the schedule of deviation (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of the obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor), within five (5) working days of the date of such receipt, notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.¹

Signature(s)

Name(s)

Capacity

¹ As an alternative the following wording may be used:

Notwithstanding anything contained herein, this agreement comes into effect two (2) working days after the submission by the Employer of one fully completed original copy of this document, including the schedule of deviations (if any), to a courier-to-counter delivery / counter-to-counter delivery / door-to-counter delivery / door-to-door delivery / courier service (delete that which is not applicable), provided that the Employer notifies the Tenderer of the tracking number within 24 hours of such submission. Unless the tenderer (now contractor) within seven (7) working days of the date of such submission notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

for the **Employer**
(Name and address of organization)

Name and signature
of witness Date

3. SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the employer before the tender closing date is limited to those permitted in terms of the conditions of tender.
2. A tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, be the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents, and which it is agreed by the Parties becomes an obligation of the contract, shall also be recorded here.
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the contract.

1. Subject
Details
2. Subject
Details
3. Subject
Details
4. Subject
Details
5. Subject

Details By the duly authorized representatives signing this schedule of deviations, the employer and the tenderer agree to and accept the details of the deviations recorded here, and the tenderer agrees to accept the deviations recorded here by the tenderer and the employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement

C1.2: CONTRACT DATA

C1.2.1 CONDITIONS OF CONTRACT

C1.2.2 PART A: CONTRACT DATA PROVIDED BY THE EMPLOYER

C1.2.3 PART B: CONTRACT DATA PROVIDED BY THE CONTRACTOR

C1.2.1 CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works - Third Edition, 2015", issued by the South African Institution of Civil Engineering (Short title: "General Conditions of Contract Third Edition, 2015") and can be obtained from:

SAICE Waterfall Park Howick Gardens
Vorna Valley Half way House
Becker Street
MIDRAND
1685
Gauteng Province
Tel: (011) 805-5947/8
Fax: (011) 805-5971.

The General Conditions of Contract 2015 makes references to the Contract Data for specific data, which, together with these conditions, collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Specific Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the General Conditions of Contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Specific Conditions of Contract below. Each item of data given is cross-referenced to the Clause in the General Conditions of Contract to which it mainly applies.

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions shall amplify, modify or supersede, as the case may be, the General Conditions of Contract Third Edition, 2015 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or sub clause in the General Conditions of Conditions Third Edition, 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

VARIATIONS TO THE GENERAL CONDITIONS OF CONTRACT ARE: Clause

1.1.1.5 Add the following to the Clause after the last sentence.

"The contract shall come into effect when the employer issues a letter to the contractor stating that his tender has been accepted / the contract has been awarded to the contractor, or upon receipt of the signed contract document by the contractor from the employer."

5.3.3 Add the following to Clause 5.3.3 after the last sentence:

"The Contractor shall not commence with the Works until they have an approved project specific health and safety plan in terms of the Occupational Health and Safety Act 1993: Construction Regulations 2014 and complied with the initial requirements thereof."

5.14.1 Practical Completion

Replace the last sentence of the second paragraph: "*Should the Engineer ... on the Due Completion Date.*" with the following:

"Should the Engineer not issue such a list within 14 days, Practical Completion shall be deemed to have been achieved on the said fourteenth day."

5.14.2 Issue of Certificate of Practical Completion

Replace "*the Engineer*" in the second line with the following:

" the Contractor shall notify the Engineer, who shall inspect the works and the Engineer"

5.14.4 Certificate of Completion

Replace "*the Engineer*" in the second line of the first paragraph with:

" the Contractor shall notify the Engineer, who shall inspect the works and the Engineer"

6.10.4 Payments:

Replace the phrase "*The employer shall pay the amount due to the Contractor within 28 days of receipt by the Employer of the payment certificate signed by the Engineer*" with the following phrase "*The Employer will make payment to the Contractor within 31 calendar days from the date of stamp of Central Registry when any payment is submitted.*"

6.11 Variations exceeding 15% Replace the "15%" with "20%"

C1.2.2: PART A: CONTRACT DATA PROVIDED BY THE EMPLOYER

CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works, Third Edition, 2015, published by the South African Institution of Civil Engineering, Private Bag X200, Halfway House, 1685, is applicable to this Contract and is obtainable from www.saice.org.za.

CONTRACT SPECIFIC DATA

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition 2015, are applicable to this Contract:

REFERENCE CONTRACT SPECIFIC DATA BY THE EMPLOYER

Clause	Description
1.1.1.13	The Defects Liability Period is Twelve (12) months (<i>measured from the date of the Certificate of Completion</i>).
1.1.1.14	The time for achieving Due Completion is Eleven (11) months (<i>measured from the Commencement Date</i>) excluding all relevant special no-working days and year end break.
1.1.1.15	The name of the Employer is: King Sabata Dalindyebo Local Municipality
1.1.1.16	The Employer's Agent is: Ntusi Group (Pty) Ltd acting through director, an associate or an official authorised hereto in writing.
1.1.1.26	The Pricing Strategy is: Re-measurement Contract
1.2.1.2	The Employer's address for receipt of communications and notices is: KSD Local Municipality Munitata Building Corner Sutherland & Owen Street Mthatha 5099 Tel: [047] 501 4394 Fax: [047] 531 2085 E-mail : nondlasis@ksd.gov.za
1.2.1.2	The Employer's Agent address for receipt of communications and notices is: Ntusi Group (Pty) Ltd 24 Calaza Street iKwezi, Mthatha 5099 E-mail : admin@ntusigroup.co.za

2.4.1	Add the following: “In the event of any ambiguity, conflict or discrepancy between the various contract documents, lists and schedules, the order of precedence (from highest to lowest) shall be as follows: 1. Form of Offer and Acceptance and Schedule of Deviations 2. Contract Data 3. General Conditions of Contract (2015) 4. Scope of Works 5. Standard Specifications of Roads and Bridgeworks (1998) 6. Site Information 7. Construction Drawings 8. Bill of Quantities 9. The Returnable Schedules
3.2.3	The Employer's Agent shall obtain specific approval from the Employer before carrying out any of his functions or duties according to the following Clauses of the General Condition of Contract: • Nominating the Employer's Agent's Representative in terms of Clause 3.3.1 • The issuing of instructions for dealing with fossils and the like in terms of Clause 4.7 • Authorising the Contractor to repair and make good excepted risks in terms of Clause 7.5.5 • The issuing of variation orders in terms of Clause 6.3.2 • The issuing of an instruction to accelerate progress in terms of Clause 5.12.4 • The approval of any extension of time for completion in terms of Clause 5.12.1 • The reduction of a penalty for delay in terms of Clause 5.13.2 • The issuing of penalties in terms of Clause 5.13 • The determination of additional or reduced costs arising from changes in legislation in terms of Clause 6.8.4 • The giving of a ruling on a Contractor's claim in terms of Clause 10.1.5 • The agreeing of the adjustment of the sums for general items in terms of Clause 6.11
3.3.6	Add the following: “The time limit for referring the matter to the Employer's Agent by the Contractor shall be twenty one (21) days after the decision in question was given by the Employer's Agent's Representative”.
4.3.3	add the following new sub-clause: “The Employer and the Contractor hereby agree, in terms of the provisions of section 37 (2) of the Occupational Health & Safety Act, 1993 (Act 85 of 1993, hereinafter referred to as ‘the Act’), that the following arrangements and procedures shall apply between them to ensure compliance by the Contractor with the provisions of the Act, namely: a) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant provisions of the Act and the Regulations

	promulgated in terms of the Act; b) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and regulations will be fully complied with; c) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations, and expressly absolves the Employer from itself being obliged to comply with any of the aforesaid duties, obligations, and prohibitions; with the exception of such duties, obligations and prohibitions expressly assigned to the Employer in terms of the Act and its associated Regulations. d) The Contractor agrees that any duly authorised official of the Employer shall be entitled (although not obliged) to take such steps as may be necessary to ensure that the Contractor has complied with his undertakings as set out more fully in paragraphs (a) and (b) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or to inspect any appropriate records or Safety Plans held by the Contractor; e) The Contractor shall be obliged to report forthwith to the Employer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge. f) The Contractor shall furthermore, in compliance with the Constructional Regulations of 2014 i. Acquaint himself with the requirements of the Employer's Health and Safety Specification as laid down in regulation 5(1)(b) of the Construction Regulation of 2014, and prepare a suitably and sufficiently documented Health and Safety Plan as contemplated in regulation 7(1)(a) of the Construction Regulation of 2014 for approval by the Employer or his assigned agent. The Contractor's Health and Safety Plan and risk assessment shall be submitted to the Employer for approval within 14 days from the date of signing the Form of Acceptance and shall be implemented and maintained from the Commencement of the Works. ii. The Employer, or his assigned agent, reserves the right to conduct periodic audits, as contemplated in the Construction Regulations 2014, to monitor that the Contractor is compliant in respect of his obligations. Failure by the Contractor to comply with requirements of these Regulations shall entitle the Employer's Agent, at the request of the Employer or his Agent, to suspend all or any part of the Works, with no recourse whatsoever by the Contractor for any damages incurred as a result of such suspension, until such time as the Employer or his Agents are satisfied that the issues in which the Contractor has been in default have been rectified."
4.3.4	Add the following new sub-clause: "The Contractor shall assume responsibility for compliance with the Environmental Management Programme (EMPR) and all other relevant environmental Acts and regulations in respect of the sites and shall ensure that the sites are rehabilitated before the conclusion of the Contract.

	a) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant environmental documentation relevant to this project, namely: i. NEMA Authorisations for the project; ii. MPRDA authorisations for the project; iii. DAFF permits for the project; iv. DWS authorisations for the project; and v. DEDEAT approved EMPr. b) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant environmental legislative provisions of the relevant Acts as listed in Section F of the Contract Document; c) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the various environmental Acts and regulations will be fully complied with; d) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations, and expressly absolves the Employer from itself being obliged to comply with any of the aforesaid duties, obligations, and prohibitions; with the exception of such duties, obligations and prohibitions expressly assigned to the Employer in terms of the Act and its associated Regulations. e) The Contractor agrees that any duly authorised official of the Employer shall be entitled (although not obliged) to take such steps as may be necessary to ensure that the Contractor has complied with his undertakings as set out more fully in paragraphs (a) and (b) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or to inspect any appropriate records or Environmental Method Statements held by the Contractor; f) The Contractor shall be obliged to report forthwith to the Employer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge."
5.3.1	The documentation required from the Contractor before commencement with the Works' execution are: An approved, project specific Health and Safety Plan (Refer Clause 4.3) Initial programme (Refer Clause 5.6) Security (Refer Clause 6.2) Insurances (Refer Clause 8.6) Signed agreement in terms of Section 37.2 of the OHS Act, 1993 A valid Letter of Good Standing from the Compensation Commissioner or FEMA
5.3.2	The time to submit the documentation required before commencement with Works' execution is fourteen (14) days after appointment
5.4.2	The access and possession of Site shall not be exclusive to the Contractor but as set out in the Site Information

5.4.4	Add the following new sub-clause: “The Contractor shall bear all costs and charges for special and temporary rights of way required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purpose of the Works.”
5.8.1	The non-working days are Sundays. The special non-working days are: 1....All gazetted public holidays.. 2.... The year end break as determined by SAFCEC.
5.11.1	<i>In the third line, after the word “progress”, insert “or alter the order”.</i>
5.13.1	The penalty for failing to complete the Works is 3.75 cents / R 100 of Contract Sum per calendar day or part thereof.
5.14.1	The requirements for achieving Practical Completion are as stated in the Scope of Works.
5.16.3	The latent defect period is ten (10) years.
6.2.1	The security to be provided by the Contractor shall be a Performance Guarantee to the value of 10% of the Contract Sum.
6.3.1	In the fifth line, after the word “shall”, insert “with the approval of the Employer”.
6.6.1.2	After all references to the word “sums”, insert “excluding VAT”
6.8.1	Add the following: “The tender rates and prices shall also be exclusive of Value Added Tax (VAT). Provision is made for the addition of VAT in the summary of the Bill of Quantities.”
6.8.2	The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values: The value of “x” is 0.10 The values of the coefficients are: a = [0.25] (Labour) b = [0.30] (Contractor’s equipment) c = [0.25] (Material) d = [0.20] (Fuel) The indices for “L”, “P”, “M” and “F” are the following as published by Statistics South Africa: 1. “L” is the “Labour Index” and shall be Eastern Cape as published in P0141 Consumer Price Index Additional tables – Table A. 2. “P” is the “Contractor’s Equipment Index” and shall be Plant and equipment as published

	in P0151.1 Construction Material Price Indices – Table 4 - Mining and construction plant and equipment price index. 3. “M” is the “Materials Index” and shall be Civil engineering material - roads, general as published in P0151.1 Construction Material Price Indices – Table 6 - Civil engineering material price indices 4. “F” is the Fuel Index” and shall be Diesel as published in P0142.1 Producer Price Index – Table 1 - PPI for final manufactured goods The base month and year is the month prior to the month in which tender close.
6.8.3	Price adjustments for variations in the cost of special materials are allowed.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Work is 80%.
6.10.2	Add the following: “Payment for materials on site will only be considered for those materials which are physically on site. Any statement in which a claim for materials off site is included, shall have attached a declaration that the materials listed in the statement are owned by the Contractor, accompanied by proof of ownership. The ownership of materials shall be transferred to the Employer in accordance with the relevant pro-forma”
6.10.3	The Retention Money deductible shall be 10% of the value of the Works. The Limit of Retention Money shall be 10% of the Contract Sum Add the following: “A retention money guarantee in lieu of retention is not permitted.
8.2.1	Add the following: “The Contractor shall protect the Works properly and shall so arrange his operations that the minimum danger and inconvenience are caused to the public and to vehicle and pedestrian traffic. For this purpose he shall, inter alia, provide and maintain sufficient road traffic signs, lights, barricades, fencing and guarding as may be necessary or required by the Employer’s Agent or by any act, regulation or statutory authorities. All operations required in connection with the execution and completion of the Works shall, as far as the provisions of the Contract permit, not unnecessarily or in any improper manner encroach upon the use of public roads or upon access to private property, and the Contractor hereby indemnifies the Employer against any claims, demand, damage and costs that may arise in this regard. Compensation for such obligations shall be included in the Contractor’s prices for provisional and general costs, except in as far as provision is made in the specifications for payment in respect of specific items pertaining to these obligations”
8.2.2.3	Add the following to the end of Clause 8.2.2.3 “risk arising from political riot and malicious damage, unless these risks are insurable with The South African Special Risk Insurance Association at the time of tendering and it is stipulated in the Contract that the Contractor is to effect insurance against these risks”.

8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance sum is R 0.00.
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is R 0.00.
8.6.1.3	The limit of indemnity for liability insurance is R 15 000 000.00 for any single claim with the number of claims to be unlimited.
8.6.1.5	Where the Contract involves manufacturing and/or fabrication of the Works or part thereof at premises other than the Site, the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the Works are adequately insured during manufacture or fabrication. In the event the Employer having an insurable interest in such Works during manufacture or fabrication then such interest shall be noted by endorsement to the Contractor's policies of insurance.
10.7.1	The determination of disputes shall be by ad hoc adjudication.

C1.2.3 PART B: CONTRACT DATA PROVIDED BY THE CONTRACTOR
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PART 2: DATA PROVIDED BY THE CONTRACTOR.

Clause	Description
1.1.1.9	The Contractor is: [Enter the Legal name of the Contractor].
1.2.1.2	The Contractor's address for receipt of communications and notices is: Telephone: E-mail:..... Address (Postal): Address (Physical):.....
1.1.1.14	The time for achieving Practical Completion isMonths
6.2.1	The security to be provided by the Contractor shall be one of the following: • The security to be provided by the Contractor shall be as stated in 6.10.3 the Contract Data.
6.5.1.2.3	The percentage allowance on the net cost of materials actually used in the completed work is 20%.

C1.3: FORM OF GUARANTEE

Contract No.

For use with the General Conditions of Contract for Construction Works, Third Edition (2015)

GUARANTOR DETAILS AND DEFINITIONS

“Guarantor” means:

Physical address:

“Employer” means:

“Contractor” means:

“Engineer” means:

“Works” means:

“Site” means:

“Contract” means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

“Contract Sum” means: The accepted amount inclusive of tax of R

Amount in words:

“Guaranteed Sum” means: The maximum aggregate amount of R

Amount in words:

“Expiry Date” means:

Contractor and/or Employer provided such instruction is received prior to the Expiry Date as indicated here.

CONTRACT DETAILS

Engineer issues: Interim Payment Certificates, Final Payment Certificate and the Certificate of Completion of the Works as defined in the Contract.

1. VARIABLE PERFORMANCE GUARANTEE

1.1 Where a Variable Performance Guarantee has been selected, the Guarantor's Liability shall be limited during the following periods to diminishing amounts of the Guaranteed sum as follows:

1.1.1 From including the date of signing the Guarantee up to and including the date of the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum: R.....

(Amount in words.....)

1.1.2 The Employer's Agent and/or the Employer shall advise the Guarantor in the writing of the date on which the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum, has been issued and the date on which the certificate of completion of the works, whichever occurs first:

R.....

(Amount in words.....)

1.1 The Employer's Agent and/or the Employer shall advise the Guarantee in writing the date on which the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum, has been issued and the date on which the Certificate of Completion of the works has been issued.

2. FIXED PERFORMANCE GUARANTEE

- 2.1 Where a fixed Performance Guarantee has been selected, the Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
- 2.2 The Guarantor's period of liability shall be from and including the date on which the performance Guarantee is signed, up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, or the date of payment in full of the Guaranteed Sum, whichever occurs first.
- 2.3 The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3. CONDITIONS APPLICATION TO VARIABLE AND FIXED PERFORMANCE GUARANTEE

- 3.1 The Guarantor hereby acknowledges that:
 - 3.1.1 Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create a n accessory obligation or any intention whatsoever to create a surety ship;
 - 3.1.2 Its obligation under this Performance Guarantee is restricted to the payment of money.
- 3.2 Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 3.2.1 to 3.2.3:
 - 3.2.1 A copy of first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 3.2.2;
 - 3.2.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 3.2.1 and sum certified has still not been paid;
 - 3.2.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 3.2.
- 3.3 Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor undertakes to pay to the Employer to the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
 - 3.3.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 3.3; or
 - 3.3.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the performance Guarantee is called up in terms of 3.3; and
 - 3.3.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
- 3.4 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 3.2 and 3.3 shall not exceed the Guarantor's maximum liability in terms of 1.1 or 2.1.
- 3.5 Where the Guarantor has made payment in terms of 3.3, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at

the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

- 3.6 Payment by the Guarantor in terms of 3.2 or 3.3 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 3.7 Payment by the Guarantor in terms of 3.3 will only be made against the return of the original Performance Guarantee by the Employer.
- 3.8 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 3.9 The Guarantor chooses the physical address as stated above for the service of all notices for all purpose in connection herewith.
- 3.10 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 1.1.2 or 2.2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
- 3.11 This Performance Guarantee, with the demand notices in terms of 3.2 or 3.3, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 3.12 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No. 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at.....

Date

Guarantor's signatory (1)

Capacity

Guarantor's signatory (2)

Capacity

Witness signatory (1)

Witness signatory (2)

C1.4 : OCCUPATIONAL HEALTH AND SAFETY AGREEMENT
C1.1.3 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993)

THIS AGREEMENT made at on this the day of in the year..... between KSD

Local Municipality, (hereinafter called "the Employer") on the one part, herein represented by

.....in his capacity as

and delegate of the Employer and

(hereinafter called "the Principal Contractor") of the other part, herein represented by

..... in his capacity as

WHEREAS the Employer is desirous that certain works be constructed, viz

..... and has accepted a tender by the Principal Contractor for the construction, completion & maintenance of such works and whereas the Employer and the Principal Contractor have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Principal Contractor with the provisions of the Occupational Health and Safety Act 1993 (Act 85 of 1993 and the Construction Regulation, 2014);

NOW THEREFORE THIS AGREEMENT WITNESSES AS FOLLOWS:

1. The Principal Contractor shall execute the work in accordance with the contract documents pertaining to this contract.
2. This Agreement shall hold good from its commencement date, which shall be the date of a written notice from the employer or engineer requiring him to commence the execution of the Works, to either:
 - a) the date of the final approval certificate issued in terms of Clause 5.16 of the General Conditions of Contract for Construction Works 2015 (3rd Edition) as issued by the South African Institution of Civil Engineering (hereinafter referred to as "the GCC 2015"), as contained in the contract documents pertaining to this contract, or
 - b) the date of termination of the contract in terms of Clause 9 of the GCC 2015.
3. The Principal Contractor declares himself to be conversant with the following: -
 - a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act.
 - i) Section 8: General duties of employers to their employees.
 - ii) Section 9: General duties of employers and self-employed persons to persons other than employees.

- iii) Section 37: Acts or omissions by employees or mandatories and
 - iv) Sub-section 37(2) relating to the purpose and meaning of this Agreement.
 - v) Construction Regulations 2014, and other safety regulations, as applicable.
 - b) The procedures and safety rules of the employer as pertaining to the Principal Contractor and to all his sub-contractors.
4. The Principal Contractor is responsible for the compliance with the Act by all his sub-contractors, whether or not selected and/or approved by the employer.
5. The Principal Contractor warrants that all his and his sub-contractors' employees are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993 which cover shall remain in force whilst any such employees are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.
6. The Principal Contractor undertakes to ensure that he and/or his sub-contractors and/or their respective employees will at all times comply with the following conditions:
- a) The Principal Contractor shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Principal Contractor shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Principal Contractor obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.
 - b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Principal Contractor to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.
 - c) The Employer hereby obtains an interest in the issue of any formal enquiry conducted in terms of section 32 of the Occupational Health and Safety Act into any incident involving the Principal Contractor and/or his employees and/or his sub-contractors.

In witness thereof the parties hereto have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:

WITNESS:

1.
NAME (Print):

2.
NAME (Print):

SIGNED FOR AND ON BEHALF OF THE PRINCIPAL CONTRACTOR:

WITNESS:

1.
NAME (Print):

2.
NAME (Print):

PRO-FORMA
ADJUDICATION BOARD MEMBER AGREEMENT

Please note that words in italics within brackets are items which should be stated

This Agreement is entered into between:

Adjudication Board Member: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number)*.

Contractor: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number)*.

Employer: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number)*.

The Contractor and the Employer will hereinafter be collectively referred to as the Parties.

The Parties entered into a Contract for *(name of project)* which provides that a dispute under or in connection with the General Conditions of Contract for Construction Works, Third Edition, 2015, must be referred to *(ad-hoc adjudication/standing adjudication)*.

The undersigned natural person has been appointed to serve as Adjudication Board Member and together with the undersigned Parties agree as follows:

1. The Adjudication Board Member accepts to perform his duties in accordance with the terms of the Contract, the General Conditions of Contract for Construction Works Adjudication Board Rules and this Agreement.
2. The Adjudicator undertakes to remain independent and impartial of the Contractor, Employer and Engineer for the duration of the Adjudication Board proceedings.
3. The Adjudication Board Member agrees to serve for the Adjudication Board proceedings.
4. The Parties may at any time, without cause and with immediate effect, jointly terminate this Agreement
5. Unless the Parties agree, the Adjudication Board Member shall not act as arbitrator or representative of either Party in any subsequent proceedings between the Parties under the Contract. No Party may call the Adjudication Board Member as a witness in any such subsequent proceedings.
6. The standing Adjudication Board's duties shall end upon the Adjudication Board Member(s) receiving notice from the Parties of their joint decision to disband the Adjudication Board.
7. The Adjudication Board Member shall pay in respect of time spent upon or in connection with the adjudication including time spent travelling:
 - a. A monthly retainer of *(amount)* for *(number)* of months, and/or
 - b. A daily fee of *(amount)* based on a *(number)* hour day, and/or
 - c. A hourly fee of *(amount)*, and/or
 - d. A non-recurrent appointment fee of *(amount)* which shall be accounted for in the final sums payable.
8. The Adjudication Board Member's expenses incurred in adjudication work shall be reimbursed at cost.

Upon submission of an invoice for fees and expenses to the Parties, the *(Contractor/Employer*)* shall pay the full amount within 28 days of receipt of the invoice and he shall be reimbursed by the other party by half the amount so that the fees and expenses are borne equally by the Parties. Late payment of such invoice shall attract interest at prime plus 3 % points compounded monthly at the prime rate charged by Adjudication Board Member's bank.

This Agreement is entered into by:

Contractor's signature:

Contractor's name:

Place:

Date:

Employer's signature:

Employer's name:

Place:

Date:

Adjudication Board Member's signature:

Adjudication Board Member's name:

Place:

Date:

**Delete the inapplicable party*

PART C2: PRICING DATA**TABLE OF CONTENTS**

C2.1	Pricing Instructions
C2.2	Schedule of Quantities

C2.1 : PRICING INSTRUCTIONS

1. Measurement and payment shall be in accordance with the relevant provisions of the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition) as amended in the Scope of Works.
2. The units of measurement described in these Bills of Quantities are metric units. Abbreviations used in the Bills of Quantities are as follows:

%	=	per cent	m ² .pass	=	square metre-pass
h	=	hour	m ³	=	cubic metre
ha	=	hectare	m ³ .km	=	cubic metre-kilometre
kg	=	kilogram	MN	=	meganewton
kℓ	=	kilolitre	MN.m	=	meganewton-metre
km	=	kilometre	MPa	=	megapascal
km-pass	=	kilometre-pass	No.	=	number
kPa	=	kilopascal	Prov sum	=	Provisional sum
kW	=	kilowatt	P C sum	=	Prime Cost sum
ℓ	=	litre	sum	=	lump sum
m	=	metre	t	=	ton (1 000 kg)
mm	=	millimetre	W/day	=	Work day
m ²	=	square metre	Pers day	=	Person days

3. For the purpose of these Bills of Quantities, the following words shall have the meanings hereby assigned to them:

Unit:	The unit of measurement for each item of work as defined in the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition).
Quantity:	The number of units of work for each item.
Rate:	The agreed payment per unit of measurement.
Amount:	The product of the quantity and the agreed rate for an item.
Lump sum:	An agreed amount for an item, the extent of which is described in the Bills of Quantities but the quantity of work of which is not measured in any units.

4. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
5. It will be assumed that prices included in the bills of quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.sabs.co.za or www.iso.org for information on standards) may have to be carried out.
6. The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.

7. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items
8. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.
9. The quantities set out in these Bills of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in these Bills of Quantities.
10. Reasonable compensation will be received where no pay item appears in the Pricing Schedule in respect of work required in terms of the Contract and which is not covered in any other pay item.
11. The short descriptions of the items of payment given in these Bills of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
12. The item numbers appearing in the Bills of Quantities refer to the corresponding item numbers in the COLTO Standard Specification for Road and Bridge Works for State Road Authorities (1998 edition).

C2.2 : BILL OF QUANTITIES

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1200		GENERAL REQUIREMENTS AND PROVISIONS				
B12.01		Community Liaison Officer:				
		(a) Community Liaison Officer cost	Prov. Sum	1	55 000,00	55 000,00
		(b) Handling costs and charges for Contractor on items B12.01 (a)	%	55 000		
B12.02		Project Steering Committee (PSC):				
		(a) Payment of expenses/disbursements to members of the PSC	Prov. Sum	1	19 800,00	19 800,00
		(b) Handling costs and profit in respect of subitem B12.02 (a)	%	19 800		
B12.03		Relocation and reinstatement of ELECTRICITY overhead power lines and/or underground cables				
		(a) Direct payment to the service provider or its agent	Prov. Sum	1	100 000,00	100 000,00
		(b) Handling costs and profit in respect of subitem B12.03(a)	%	100 000		
B12.04		Relocation and reinstatement of TELKOM/FIBRE overhead lines and / or underground cables				
		(a) (a) Direct payment to Telkom or its agent	Prov. Sum	1	100 000,00	100 000,00
		(b) (b) Handling costs and profit in respect of B12.04(a)	%	100 000		
B12.05		Relocation and reinstatement of WATER and SEWER lines belonging to the local authority, institution or community				
		(a) Direct payment to WSP authority or its agent	Prov. Sum	1	200 000,00	200 000,00
		(b) Handling costs and profit in respect of B12.05(a)	%	200 000		
B12.06		Occupational Health and Safety Services for the duration of the Contract				
		(a) Direct payment to client OHS agent	Prov. Sum	1	154 000,00	154 000,00
		(b) Handling costs and profit in respect of B12.06(a)	%	154 000		
B12.07		Environmental Control Monitoring (ECO) Services for the duration of the Contract				
		(a) Direct payment to client ECO agent	Prov. Sum	1	143 000,00	143 000,00
		(b) Handling costs and profit in respect of B12.07(a)	%	143 000		
CARRIED FORWARD						

BROUGHT FORWARD						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B12.08		Accredited Training				
		(a) Payment to an Accredited Training Service Provider	Prov. Sum	1	100 000,00	100 000,00
		(b) Handling costs and profit in respect of B12.08(a)	%	100 000		
B12.09		Trainee Technician				
		(a) Payment to Trainee Technician(s)	Prov. Sum	1	110 000,00	110 000,00
		(b) Handling costs and profit in respect of B12.09(a)	%	110 000		
B12.10		Design, supply, delivery and instalation of complete Street Lights				
		(a) Direct payment to the design service provider and supplier for materials	Prov. Sum	1	2 570 400,00	2 570 400,00
		(b) Handling costs and profit in respect of B12.10(a)	%	2 570 400		
B12.11		Construction of name board arccording to specification	No.	1		
CARRIED FORWARD TO SUMMARY :						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1300		CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS				
B13.01		Contractor's general obligations				
		(a) Fixed obligations	Lump sum	1		
		(b) Value - related obligations	Lump sum	1		
		(c) Time - related obligations	Month	11		
CARRIED FORWARD TO SUMMARY :						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1400		HOUSING, OFFICES AND LABORATORY FOR THE ENGINEER'S SITE PERSONNEL				
14,01		Office and laboratory accommodation				
		a) Office (Interior floor space only)	m ²	40		
		c) Open concrete working 150mm thick	m ²	40		
		e) Ablutions facilities for Resident Engineer	m ²	8		
14,02		Office and laboratory furnitures				
		a) Chairs				
		i) Visitors	No	2		
		ii) Desk chairs on castors	No	2		
		b) Draughtsman's stools	No	2		
		d) Desks, complete with drawers and locks	No	2		
		e) Drawing table	No	2		
		f) Conference tables	No	1		
		g) White boards (1m x1m)	No	2		
B14.03		Office and laboratory fittings, installation and equipment				
		a) Items measured by number				
		i) 220 / 250 volt power points	No	2		
		ii) 400 / 231 volt 3-phase power points	No	2		
		iii) Double 80 watt flourescent light fittings complete with ballast under tubes	No	2		
		v) Single incadescent light fittings complete with taps and drains	No	2		
CARRIED FORWARD:						

BROUGHT FORWARD:						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		vi) Hand wash basins complete with taps and drains	No	1		
		viii) Extractor fans installed complete with own power connection	No	1		
		x) Fire extinguishers 2,5kg BFC type, complete, mounted on wall brackets	No	2		
		xi) Air conditioning units with 2,2kW minimum capacity, mounted and with own power connection	No	2		
		xv) Steel filling cabinets with drawers	No	1		
		xvi) Refrigerators with 300liter capacity and 24liter freezer	No	1		
		b) Prime-cost items and items measured in a L/sum:				
		ix) Provisions of cellular telephones complete with handsfree kits including, calls in connection with contract admin and telephone rental	Prov Sum	1	5 500,00	5 500,00
		x) Handling costs and profit in respect of subitem 14.03 b (ix)	%	5 500		
		xi) Provision of survey equipment as specified	Lump Sum	1		
		xii) Provision computer, software, printer and modem as specified including a digital camera	Prov Sum	1	50 000,00	50 000,00
		xiii) Handling costs and profit in respect of subitem 14.03 b (xii)	%	50 000		
B14.04		Car ports				
		(a) Carports as specified, at offices and laboratory buildings	No	1		
B14.07		Rented, hotel and other accommodation				
		(a) Provisional sum for providing rented housing, hotel or other accommodation as described in 14.03 (c) (ii)	Prov Sum	1		Rate Only
		Handling costs and profit in respect of subitem 14.07 (a) above	%			Rate Only
CARRIED FORWARD:						

BROUGHT FORWARD:						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B14.08		Services				
		The provision of water, electricity, low pressure gas sewerage, septic tanks, rubbish removal, cleaning services maintenance and repairs				
		(a) Services at offices				
		(i) Fixed costs	Lump sum	1	10 000,00	10 000,00
		(ii) Running costs	Month	11	5 000,00	55 000,00
B14.11		Engineer's Staff:				
		(a) Management and supervision of the works by Resident Engineer and Clerk of Works	Prov Sum	1	330 000,00	330 000,00
		(b) Handling costs and profit in respect of B14.13 (a)	%	330 000		
		(c) Miscellaneous Expenses	Prov Sum	1	15 000,00	15 000,00
CARRIED FORWARD:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1500		ACCOMODATION OF TRAFFIC				
B15.01		Accommodation of traffic and maintaining temporary deviations	km	1,00		
B15.02		Earthworks for temporary deviations				
		(a) Shaping of temporary deviations	km	1,0		
		(b) Cut and borrow to fill	m³	150,0		
		(c) Cut to spoil	m³	50,0		
B15.03	LI	Temporary traffic-control facilities				
		(a) Flagmen (including equipment)	man-day	968		
		(b) Portable STOP and GO-RY signs	No	2		
		(d) Amber flicker lights	No	2		Rate Only
		(e) Road signs, R - TR-series, (1200 mm)	No	20		
		(f) Road signs, TW-series, (1200 mm)	No	20		
		(h) Delineators (TW401.TW402)				
		(i) Single sided blade (200mm x 800mm)	No	100		
		(ii) Double sided blade (200mm x 800mm)	No	100		
		(i) Moveable barricade/road sign combination TW 411 (2400mm x 400mm)	No	5		
		(j) Traffic cones (750 mm)	No	50		
		(l) Movable barriers (portable New Jersey type concrete barriers or s	m	40		
B15.04	LI	Relocation of traffic-control facilities	Lump. Sum	1		
B15.06		Watering of temporary deviations	kl	2 000		Rate Only
B15.07		Blading by road grader of:				
		(b) Existing roads used as temporary deviations	km	10		Rate Only
B15.10		Accommodation of traffic where the road is constructed in half-widths	km	1		
CARRIED FORWARD TO SUMARRY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1700		CLEARING AND GRUBBING				
B17.01		Clearing and grubbing	ha	2,00		
B17.02	LI	Removal and grubbing of large trees and tree stumps:				
		(a) Girth exceeding 1m up to and including 2m	No			Rate Only
		(b) Girth exceeding 2m up to and including 3m	No			Rate Only
B17.03	LI	Reclearing of surfaces (on the written instruction of the Engineer Only)	ha	2,00		Rate Only
B17.04	LI	Clearing and grubbing at inlets and outlets of hydraulic structures	m ²	200		
B17.05	LI	Cleaning out of hydraulic structures				
		(a) Pressurized water flushing of pipes with an internal diameter up to and including 1200mm	m	50		
B17.07	LI	Removal and conservation of topsoil obtained from the road reserve or borrow areas within a freehaul of 1.0km	m ³	100		
CARRIED FORWARD TO SUMMARY :						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B1900		DAYWORKS (PROVISIONAL)				
B19.01		Personnel during normal working hours				
		(a) Unskilled labour	hr	10		
		(b) Semi-skilled labour	hr	10		
		(c) Skilled labour	hr	10		
		(d) Ganger	hr	10		
		(e) Flagman	hr	10		
		(f) Artisan	hr	10		
B19.02		Plant				
		(a) Flat bed truck (specify size)	hr	10		
		(b) Tipper Trucks - 3 to 5 ton capacity	hr	10		
		(c) Tipper Trucks - more than 5 ton	hr	10		
		(d) Loader (0,5m³) bucket	hr	10		
		(e) Backhoe TLB (digger loader)	hr	10		
		(f) Excavator (20-30 ton)	hr	10		
		(g) Grader (CAT 140 G or similar)	hr	10		
		(h) Compactor (Bomag 90 or similar)	hr	10		
		(i) Water truck (5000 liter)	hr	10		
		(j) Dozer (D7 or similar))	hr	5		
		(k) Mechanical broom	hr	10		
		(l) Tractor-trailor combination (43KW, 3 ton min)	hr	5		
CARRIED FORWARD:						

BROUGHT FORWARD:						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		(m) Suitable truck/bus for transporting labourers (30 people min	hr	5		Rate Only
		(n) Safety vehicle for pre-marking purposes	hr	5		
		(o) Compressor (air) including hose and tools (specify)	hr	5		
		(p) Dewatering pump including generators and accessories (specify size)	hr	5		
		(q) Mobile electric welding sets and accesories (specify size)	hr	5		
		(r) Cutting torch with mobile electric & oxy acetylene installation	hr	5		
		(s) Mobile concrete mixers (specify size)	hr	5		
		(t) Light delivery vehicle (LDV)	hr	10		
		(u) Centre-mount crane (specify size)	hr	2		
		(v) Low bed truck (specify size)	hr	5		
		(x) Bomag Roller	hr	15		
		(y) Other (specify)	hr	15		
CARRIED FORWARD TO SUMMARY:						

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ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2100		DRAINS				
B21.01		Excavation of open drains				
		(a) Excavating soft material situated within the following depth ranges below the surface level				
		(i) 0m up to 1,5m	m ³	20		
		(ii) Exceeding 1.5m up to 3,0m	m ³	15		
		(b) Extra over subitem B21.01(a) for excavation in hard material, irrespective of depth	m ³	10		
B21.02		Clearing and shaping existing open drains	m ³			Rate Only
B21.03		Excavation for subsoil drainage system				
		(a) Excavating soft material situated within the following depth ranges below the surface level				
		(i) 0m up to 1,5m	m ³	60		
		(ii) Exceeding 1.5m up to 3,0m	m ³	12		
		(b) Extra over subitem B21.01(a) for excavation in hard material, irrespective of depth	m ³	30		
B21.04		Impermeable backfilling to subsoil drainage system	m ³	59		
B21.06		Natural permeable material in subsoil drainage system				
		(a) Crushed stone obtained from approved source				
		(i) 19mm single size aggregate	m ³	36		
B21.08		Pipes in subsoil drainage systems				
		(b) Unplasticised PVC pipes and fittings, normal duty complete with couplings				
		(i) 110 mm internal dia. perforated or slotted	m	100		
		(ii) 110 mm internal dia. unperforated	m			Rate Only
CARRIED FORWARD:						

BROUGHT FORWARD:					
B21.10		Synthetic-fibre filter fabric			
		(a) Grade 1 non-woven needle punched	m ²	100	
B21.12		Concrete outlet structures, manholes, junction boxes and cleaning eyes fo subsoil drainage systems:			
		(a) Outlet structures	No.	2	
		(b) Manhole boxes	No.	2	
		(c) Junction boxes	No.	2	
		(d) Cleaning eyes	No.	10	
B21.013		Concrete caps for sub-soil drain pipes	No.	3	
B21.17		Test flushing of pipe subsoil drains	No.	5	
B21.18		Excavation for the clearing of existing concrete drainage system			
		(a) Manholes, inlet and outlet structures			
		(i) Channels	m ³	50,00	Rate Only
		(b) Culvert barrels	m ³		Rate Only
		(c) Concrete side drains	m ³	100	Rate Only
B21.19		Selected backfill material under concrete-lined side drains compacted to 93% of modified AASHTO density	m ³		Rate Only
21/B16.02		Overhaul on material hauled in excess of 1.0km	m ³ -km		Rate Only
CARRIED FORWARD TO SUMMARY :					

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B22.00		SECTION 2200: PREFABRICATED CULVERTS				
B22.01		Excavation:				
		(a) Excavating in soft material with the following depth ranges below the surface level				
		(i) 0m up to 1,5m	m ³	1 350		
		(ii) Exceeding 1,5m and up to 3m	m ³	270		
		(iii) Exceeding 3m and up to 4.5m	m ³			Rate Only
		(b) Extra over subitem B22.01(a) for excavation in hard material, irrespective of depth	m ³	135		
B22.02		Backfilling:				
		(a) Using excavated material	m ³	1 209		
		(b) Using imported selected material	m ³	242		
B22.03		(b) Concrete pipe culverts (On Class B Bedding)				
		(i) 450 mm dia. Type 100D	m	0,00		Rate Only
		(ii) 600 mm dia. Type 100D	m	500,00		
		(iii) 750 mm dia. Type 100D	m			Rate Only
		(iv) 900 mm dia. Type 100D	m			
B22.05		Portal and rectangular culverts:				
		(b) 1,5m x 1,5m SATS rectangular portal culvert	m			Rate Only
B22.07		Cast in-situ concrete and formwork				
		(b) Cast in situ concrete Class 25/19 for base slab, abutment, top slab and wingwals	m ³			Rate Only
B22.10		Steel reinforcement				
		(b) High-tensile steel bars	t			Rate Only
CARRIED FORWARD:						

BROUGHT FORWARD:						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B22.12		Removing existing concrete				
		(a) Plain Concrete	m ³	10		
		(b) Reinforced Concrete	m ³	30		
B22.14		Removing stacking and disposal of existing prefabricated culverts				
		(i) All pipe sizes in all classes	m	300		
B22.17		Manholes, catchpits, precast inlet and outlet structures complete				
		(a) Manholes: (standard depth: 1.2m)				
		(i) 450mm dia. brick manhole:(As detailed on drawing No. NG/KES/STW&RD-02)	No			Rate Only
		(iii) 600mm dia. brick manhole:(As detailed on drawing No. NG/KES/STW&RD-02)	No	2		
		(iii) 750mm dia. brick manhole:(As detailed on drawing No. NG/KES/STW&RD-02)	No			Rate Only
		(iv) 900mm dia. brick manhole:(As detailed on drawing No. NG/KES/STW&RD-02)	No			Rate Only
		(f) Kerb inlet (standard depth: 1.5m, complete as per the referenced standard detail)				
		(i) 450mm dia. kerb inlet:(As detailed on drawing No. NG/KES/STW&RD-02)	No			Rate Only
		(ii) 600mm dia. kerb inlet:(As detailed on drawing No. NG/KES/STW&RD-02)	No	12		
		(iii) 750mm dia. kerb inlet:(As detailed on drawing No. NG/KES/STW&RD-02)	No			Rate Only
		(iv) 900mm dia. kerb inlet:(As detailed on drawing No. NG/KES/STW&RD-02)	No			Rate Only
		(g) Headwalls (As detailed on drawing No.NG/KES/STW&RD-01)				
		(i) 450mm dia. (Normal)	No			Rate Only
CARRIED FORWARD:						

BROUGHT FORWARD:						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B22.21		(ii) 600mm dia. (Normal)	No	1		
		(iii) 750mm dia. (Normal)	No			Rate Only
		(iii) 900mm dia. (Normal)	No			Rate Only
		Accessorries				
		(b) Inlet grids including class 25/19 concrete slabs and frames				
22/B16.02		(i) Type 2	No.	2		
		Overhaul on material hauled in excess of 1.0km	m³-km	500		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2300		CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS				
B23.01		Concrete kerbing				
		(a) Precast concrete mountable kerb kerbing Figure 3 as detailed on Drawing No. NG/KES/STW&RD-01				
		(i) Radius exceeding 4m up to 20 m	m	50,00		
		(b) Precast concrete edge strip kerbing Figure 8 as detailed on Drawing No. NG/KES/STW&RD-01				
		(i) Radius exceeding 4m up to 20 m	m	50		
		(c) Precast concrete mountable kerb Figure 12 as detailed on Drawing No. NG/KES/STW&RD-01				
		(i) Radius exceeding 4m up to 20 m	m	850		
		(d) Precast concrete mountable kerb kerbing Figure 14 as detailed on Drawing No. NG/KES/STW&RD-01				
		(i) Radius exceeding 4m up to 20 m	m	100		
B23.02		Concrete kerbing channelling combination				
		(a) Precast barrier kerbing Figure 3, complete with precast kerbing Figure 14 channel and concrete backing, as detailed on Drawing No. NG/KES/STW&RD-01				
		(i) Radius exceeding 4m up to 20 m	m	1 070		
		(b) Precast barrier kerbing Figure 8, complete with precast kerbing Figure 14 channel and concrete backing, as detailed on Drawing No. NG/KES/STW&RD-01				
		(ii) Radius exceeding 4m up to 20 m	m	1 070		
23,05		Inlet, outlet, transition and similar structures				
		(a) (i) 1m long transition piece and mountable kerb and channel as per Drawing No. NG/KED/STW&RD-01	No	10		
		(ii) 1m long transition piece between barrier and channel and edge strip as per Drawing No. NG/KES/STW&RD-01	No	10		
CARRIED FORWARD:						

BROUGHT FORWARD:						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
23,07		Trimming of excavations for concrete-lined open drains				
		(a) In soft material	m ²			Rate Only
		(b) In hard material	m ²			Rate Only
23,08		Concrete-lined open drains				
		(a) Cast in situ concrete lining Class 25/19	m ³			Rate Only
		(b) Clas U2 surface finish to cast in situ concrete as per Drawing No. NG/KES/STW&RD-01	m ²			Rate Only
23,09		Formwork to cast in-situ concrete for open drains (class F2 surface finish):				
		(a) To sides with formwork on the internal face only	m ²			Rate Only
23,12		Steel reinforcement				
		(c) Welded steel fabric ref 395	m ²			Rate Only
B23.16		Removing, stacking and disposing existing kerbs (all types)	m	1 200		
B23.17		Concrete for drive ways				
		(a) Cast in situ concrete lining Class 25/19 including formwrok	m ³	20		
		(b) Welded steel fabric ref 195	m ²	133		
CARRIED FORWARD TO SUMMARY:						108 Page

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
B2800		CABLE DUCTS				
B28.01		Excavate in all materials for trenches, backfill, compact and dispose of surplus material	m ³	150,00		
B28.02		Supply, lay, bed and prove ducts including draw wires. All ducts to be class 4 uPVC ducts to SABS 791 with sleeve type couplings:				
		(a) Single 110 mm ducts (provisional)	m	100		
B28.03		Telkom and/or Neotel ducts:				
		(a) Supply, lay, bed and prove ducts including draw wires. (uPVC ducts available from Telkom and/or Neotel):				
		(i) Single 110 mm ducts (provisional)	m	100		
B28.04		Import bedding material, where ordered:				
		(a) Non plastic bedding sand	m ³	100		
B28.06		Cable markers:				
		(a) Kerb markers:				
		(i) Supply and install kerb face service route markers (provisional)	No.	20		
B28.07		Supply and install precast concrete protection slabs over existing and/or proposed services as indicated by the engineer:				
		(a) Type A (1,5 m x 0,9 m)	No.	10		
		(b) Type B (1,0 m x 0,9 m)	No.	10		
CARRIED FORWARD TO SUMMARY :						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3100		BORROW MATERIAL				
B31.01		Excess overburden	m ³	200,00		
B31.03		Finishing-off borrow areas in:				
		(a) Hard material	ha	0,50		
		(b) Intermediate material	ha	0,50		
		(a) Soft material	ha	0,50		
CARRIED FORWARD TO SUMMARY :						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3300		MASS EARTHWORKS				
B33.01		Cut and borrow to fill, including freehaul up to 1.0km:				
		(a) Material in compacted layer thickness of 200mm :				
		(ii) Compacted to 93% of mod AASHTO density	m ³	10		
		(c) Rock fill	m ³	210		
B33.04		Cut to spoil and stockpile, including freehaul up to 1.0km. Material obtained from:				
		(a) Soft excavation	m ³	2 575		
		(b) Intermediate excavation	m ³	1 287		
		(c) Hard excavation	m ³	429		
		(d) Boulder excavation Class A	m ³			Rate Only
		(e) Boulder excavation Class B	m ³			Rate Only
B33.07		Removal of unsuitable material (Including free-haul of 1.0km)				
		(a) In layer thickness of 20mm and less				
		(ii) Unstable material	m ³	200		
B33.10		Roadbed preparation and the compaction of material				
		(b) Compaction to 93% of modified AASHTO density	m ³	1 287		
B33.12		Insitu treatment of roadbed				
		(a) Insitu treatment by ripping	m ³	1 352		
B33.13		Finish-off cut and fill slopes, medians and interchange areas:				
		(a) Cut Slopes	m ²	50		
		(b) Fill Slopes	m ²	50		
33/B16.02		Overhaul on material hauled in excess of 1.0km	m ³ -km	3 433		
CARRIED FORWARD TO SUMMARY :						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3400		PAVEMENT LAYERS OF GRAVEL MATERIAL				
B34.01		Pavement layers constructed from gravel obtained from borrow pit and/or commercial sources:				
		(a) Gravel selected layer (unstabilised gravel) compacted to:				
		(ii) 93% of modified AASHTO density compacted in 150mm layer thickness (G7)	m ³	604		
		(c) Gravel sub-base (unstabilised gravel) compacted to:				
		(ii) 97% of modified AASHTO density compacted in 150mm layer thickness (G5)	m ³	1 165		
		(e) Gravel base layer compacted to:				
		(i) 98% of modified AASHTO density compacted in 150mm layer thickness	m ³			Rate Only
		(ii) 95% of modified AASHTO density compacted in 200mm layer thickness G6 (side walk)	m ³	288		
		(d) Gravel subbase (chemically stabilized material) compacted to:				
		(ii) 96% of modified AASHTO density compacted in 150mm layer thickness (C4)	m ³			Rate Only
B34.04		In-situ reconstruction of existing pavement layers as:				
		(g) Base (unstabilized material, blend existing basecoarse with G2) compacted to 98% of modified AASHTO density, using:				
		(i) Non-cemented material compacted in 150mm layer thickness (G2)	m ³			Rate Only
		(g) Base (unstabilized material, blend existing basecoarse with G4) compacted to 98% modified AASHTO density, using:				
		(i) Non-cemented material compacted in 150mm layer thickness (G4)	m ³			Rate Only
B34.09		Extra over items 34.03 for placing and compacting gravel pavement layers in restricted areas:				
		(a) Non-cemented material	m ³			Rate Only
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3600		CRUSHED-STONE BASE OR SUBBASE				
B36.01		Crushed-stone base				
		(c) Obtained from crushed stone obtained from cormecial source and compacted to 102% of modified AASHTO density (150mm G2)	m ³	1 088		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3800		SECTION 3800: BREAKING UP EXISTING PAVEMENT LAYERS				
B38.01		Excavating and removing existing bituminous material (except milled material):				
		(b) Material to be disposed of with the average depth of excavation:				
		(i) Not exceeding 30mm	m ²	3 520		
B38.04		Excavating and spoiling material from an existing pavement and/or the underlying fill:				
		(a) Non-cemented material	m ³	0		Rate Only
B38.08		Sawing or cutting asphalt or cemented pavement layers				
		(b) Cutting Asphalt	m	100		
38/B16.02		Overhaul on material hauled in excess of 1.0km	m ³ -km	1 408		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3900		SECTION 3900: PATCHING AND REPAIRING EDGE BREAKS				
B39.01		Sawing or cutting asphalt or cemented pavement layers				
		(a) Sawing Asphalt to and average depth				
		(i) Not Exceeding 50mm	m ²	450		
B39.02		Excavating in existing pavements for patching in:				
		(c) 150mm G5 base material compacted to 95% Mod AASHTO	m ³	67,50		
B39.03		Backfilling of excavations for patching with:				
		(b) G2 base material stabilized with bituminous emulsion (60% stable-grade anionic emulsion @ 3% by mass of compacted base and ordinary cement @ 1% by mass of compacted base), for a patch with surface area:	m ³	67,50		
B39.04		Compacting the floor of excavations for patching	m ²	450		
B39.06		Tack coat (60% stable grade emulsion)	/			Rate Only
B39.07		Hot premix (applied 30 mm thick)				
		(i) Not exceeding 5m ²	m ²			Rate Only
		(ii) Exceeding 5m ² but not exceeding 100m ²	m ²			Rate Only
		(iii) Exceeding 100m ²	m ²			Rate Only
B39.08		Cold premix (applied 30 mm thick)				
		(i) Not exceeding 5m ²	m ²			Rate Only
		(ii) Exceeding 5m ² but not exceeding 100m ²	m ²			Rate Only
		(iii) Exceeding 100m ²	m ²			Rate Only
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4100		PRIME COAT				
B41.01		Prime Coat				
		(a) MC-30 cut-back bitumen	/	6 731		
CARRIED FORWARD TO SUMMARY:						0,00

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4200		ASPHALT BASE AND SURFACING				
B42.02		Asphalt Surfacing				
		(a) 30mm Continuously graded (Overlay infront of Spar)	m ²	1 000		
		(b) 30mm Continuously graded (King Edward Street)	m ²	7050		
B42.04		Tack coat of 30% stable-grade emulsion	/	6504		
B42.04		Construction of speedhumps as per the standard detail	No.			Rate Only
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5100		PITCHING, STONework AND PROTECTION AGAINST EROSION				
B51.01		Stone pitching				
		(b) Grouted stone pitching	m ²			Rate Only
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5200		GABIONS				
B52.01		Foundation trench excavation and backfilling:				
		(b) In all other classes of materials	m ³			Rate Only
B52.02		Surface preparation for bedding the gabions	m ²			Rate Only
B52.03		Gabions				
		(a) Galvanized gabion boxess				
		(i) 1,0mx1,0mx1,0m mesh 80mm	m ³			Rate Only
		(c) Galvanised gabion mattresses				
		(i) 1,0mx1,0mx0,4m mesh 80mm	m ³			Rate Only
B52.04		Filter fabric				
		(a) Bidim U14 or similar approved	m ²			Rate Only
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5400		SECTION 5400 : GUARDRAILS				
B54.01		Guardrails on timer posts:				
		(a) Galvanized	m			Rate Only
B54.03		Extra over items 54.01, 54.02 and 54.11 for horizontally curved guardrails factory bent to a radius of less than 45m	m			Rate Only
B54.04		End treatments				
		(a) End Wings	No.			Rate Only
		(b) Bull noses	No.			Rate Only
B54.06		Reflective plates	No.			Rate Only
B54.12		Extra over items 54.01, 54.02 and 54.11 for excavating in hard material holes for guardrail post	No.			Rate Only
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5600		SECTION 5600 : ROAD SIGNS				
B56.01		Road sign boards complete with supports with Class 1 retro-reflective background. Symbols and lettering in semi matt black. Borders in Class 1 retro- reflective material, where the signboard is constructed from :				
		(c) Prepainted galvanised steel plate (Chromadek 1.2mm thick) or approved equivalent				
		(i) <u>600mm diameter Round or Stop signs:</u>				
	LI	- R 1	No.	10		
	LI	- R 201	No.	10		
		(ii) <u>900mm Triangular signs:</u>				
	LI	- R 2	No.	4		
	LI	- W202	No.	2		
	LI	- W203	No.	4		
	LI	- W401	No.	20		
	LI	- W402	No.	10		
B56.03		Road sign supports:				
		(b) Timber (treated with tanalith)				
	LI	(i) 110mm diameter	m	80		
B56.05		Excavation and backfilling for road sign supports:				
	LI	(a) Using 15 Mpa concrete for backfilling	m ³	10		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5700		ROAD MARKINGS				
B57.02		Retro-reflective road-marking paint:				
		(a) White lines (broken or unbroken)				
	LI	(i) 100mm wide	km	0,9		
	LI	(d) White lettering and symbols	m ²	500		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5900		FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS				
B59.01		Finishing road and road reserve				
		(b) Single carriageway road	km	0,95		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
7300		CONCRETE BLOCK PAVING FOR ROADS				
73,01		Concrete block paving				
		(a) 80mm Class 35, Type SA, grey coloured interlocking precast concrete segmental pavers laid in 45 ⁰ herringbone pattern	m ²			Rate Only
	LI	(b) 60mm Class 35, Type SA, grey coloured interlocking precast concrete segmental pavers laid in 45 ⁰ herringbone pattern	m ²	1 675		
73,02	LI	Cast in situ concrete edge and intermediate beams	m ³	10,00		
73,03		Provision of approved herbicide and ant poison:				
	LI	(a) Provision of materials	Lump. Sum	1,00		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
8100		TESTING WORKMANSHIP AND MATERIALS				
B81.02		Other special tests requested by the Engineer	Prov.sum	1	150 000,00	150 000,00
B81.02		Handling costs and charges for Contractor on items B12.01 (a)	%	150 000		
CARRIED FORWARD TO SUMMARY:						

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
9300		ENVIRONMENTAL AUDITING				
B93.01		(a) Designated Environmental Officer	Months	11		
B93.02		(a) Principal Contractor's Compliance with EMPr	Lump Sum	1		
CARRIED FORWARD TO SUMMARY:						0,00

ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
9400		OCCUPATIONAL HEALTH AND SAFETY				
94,01		Preparation of Contractor's site specific Health and Safety Plan and File	Lump sum	1		
94,02		Principal Contractor's initial obligations in respect of the OHS Act and Construction Regulations	Lump sum	1		
94,03		Principal Contractor's time related obligations in respect of the OHS OHS Act and Construction Regulations including Covid-19 signage	Month	11		
94,04		Review of OHS Plan for each assignment. Rate to include for risk assessment specific to the Covid-19 Epidemic and other adjustments to ensure compliance for the assessment	Sum	1		
94,05		Provision of Personal Protective Equipment & Protective Clothing (PPE)				
		(a) Reflective vests	No	30		
		(b) Hard hats	No.			Rate Only
		(c) Protective foot wear	No	30		
		(d) Earplugs	No	10		
		(e) Dust masks	No	500		
		(f) Gloves	No	100		
		(g) High visibility overalls to SARTSM Chapter 13 Level 3	No	30		
		(h) Ear defenders SABS approved	No			Rate Only
		(i) Face masks for Covid-19 (respiratory protection, as required)	No	10		
		(j) Surgical gloves (for security and cleaning team)	No	50		
		(k) Safety googles for screening person	No.	5		
		(l) Hand sanitiser - 500ml	No.	100		
		(m) Cleaning detergents	Lump Sum	1		
94,06		Provision of full time Construction Health & Safety Officer	Month	11		
94,07		Costs of medical certificates and Medical Surveillance				
CARRIED FORWARD:						

BROUGHT FORWARD:						
ITEM No.	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
		(b) Periodic and exit examinations	No	30		
		(c) Contractor's charge to allow for handling costs and profit in respect of subitems 13/X.07 (a) and (b)	%			
		(d) Screening for Employees with covid-19 symptoms	Lump Sum	1		
		(e) None contact thermometers	No.	2		
94,08		Induction Training	No	30		
94,09		Payment for health and safety representatives at meetings	Hr	108		Rate Only
94,10		Provision of First Aid Boxes	No	1		
94,12		Facilities for contractor including offices, storage sheds, workshops, laboratories, living accommodation, ablution and latrine facilities, tools and equipment, waste supplies, electric power, communications, setting out of works and access, Made Covid-19 Safe	Lump Sum	1		
94,13		Waste management for Covid-19 with adequate waste bins	Lump Sum	1		
94,14		Maintenance of a registers for workers contacts	Lump Sum	1		
CARRIED FORWARD TO SUMMARY:						

<u>SUMMARY OF THE SCHEDULE OF QUANTITIES</u>	
Section 1200	General Requirements and Provisions
Section 1300	Contractor's Establishment on Site and General Obligations.
Section 1400	Housing, Offices and Laboratories for the Engineer's Site Personnel
Section 1500	Accommodation of Traffic
Section 1700	Clearing and Grubbing
Section 1900	Dayworks
Section 2100	Drains
Section 2200	Prefabricated Culverts
Section 2300	Concrete Kerbing, Concrete Channeling, Chutes and Downpipes and Concrete Linings for Open Drains
Section 2800	Cable Ducts
Section 3100	Borrow Materials
Section 3300	Mass Earthworks
Section 3400	Pavement Layers of Gravel Material
Section 3600	Crushed-Stone Base and subbase
Section 3800	Breaking up Existing Pavement Layers
Section 3900	Patching and Repairing Edge Breaks
Section 4100	Prime Coat
Section 4200	Asphalt Base and Surfacing
Section 5100	Pitching, Stonework and Protection Against Erosion
Section 5200	Gabions
Section 5400	Guardrails
Section 5600	Road Signs
Section 5700	Road Markings
Section 5900	Finishing the Roads and Road Reserve and Treating Old Roads
Section 7400	Concrete Block Paving For Roads
Section 8100	Testing Workmanship and Materials
Section 9300	Environmental Management Plan Implementation
Section 9400	Occupational Health and Safety
SUB TOTAL-1	
ALLOW 7,5% FOR CONTINGENCIES	
ALLOW 5% CPA	
SUB TOTAL-2	
ALLOW 15% VALUE ADDED TAX	
GRAND TOTAL	

CONTRACT PART 3: SCOPE OF WORKS	
ITEM	
C3.1	Description of the Works
C3.2	Engineering
C3.3	Procurement
C3.4	Construction

C3.1: DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The Employer's objectives are to deliver public infrastructure located within the Local Municipal boundary within the province of the Eastern Cape.

A major objective of the targeted procurement procedure is to extend economic opportunities and entrepreneurial capacity to all by the optimum utilisation of the resources existing in the vicinity of projects, the development of these resources in the execution of the project, and by maximising the amount of project funds retained within the project locality.

It is also an objective of the Employer to promote the use of local emerging Contractors from the KSD Municipal area who are owned, managed, and controlled by previously disadvantaged individuals. To this end, some of the construction operations on this project have been reserved for selected sub-Contractors who are registered with the CIDB with a grading of 3 and lower. It is the Employers objective that a minimum of **20%** of the contract value be subcontracted to SMME contractors.

The Employer has further set goals that a minimum of **5%** of the contract value be expended on local labour and that a minimum of **5%** of the contract value be expended on local resources / enterprises from within the KSD Local municipal area.

C3.1.2 OVERVIEW OF THE WORKS (SCOPE)

The existing King Edward Street in Mthatha CBD needs an upgrading to surface standard in order to improve the geometric standards; safety; traffic demand.

C3.1.3 EXTENT OF THE WORKS

The project entails the upgrading to a surfaced road standard of an existing 850m gravel residential street in Mthatha Town. The upgrade includes mass earthworks, pavement layers and Continuously Graded Asphalt Surfacing. The project also includes kerb and channelling, stormwater conduits and upgrading of existing Street Lights.

The works shall further comprise of appurtenant works such as road signs, concrete side drains, cross drainage, etc.

C3.1.3.1 GENERAL

This document pertains particularly to the upgrade of the residential streets and comprises essentially the following:

- (a) Establishment on site;
- (b) Mass earthworks and roadbed preparation to the in situ road formation and new formations to improve geometrics and road profiles;
- (c) Construct gravel pavement layers including selected layers, gravel base and sub-base and

asphalt surfacing.

- (d) Construct deviations and accommodate traffic;
- (e) Relocate existing services where required (done by service providers);
- (f) Construction of sub surface drains, lined side drains, etc;
- (g) Installation of kerbing and paved walkways;
- (h) Supply and erection of road signs;
- (i) Maintenance during construction;
- (j) Stockpiling of material from existing road;
- (k) Protection of slopes and the establishment of vegetation;
- (l) Training of the local labour and management;
- (m) Employment and management of selected SMME subcontractors;
- (n) Ancillary works.

The above is merely an overview of the Contract Works and shall in no way limit the work to be carried out by the Contractor.

C3.1.4 LOCATION OF THE WORKS

The project is located with Mthatha Town Central Business District (CBD).

C3.1.5 TEMPORARY WORKS

C3.1.5.1 SERVICES (TELKOM, ELECTRICITY, ETC)

Items have been allowed in the Bill of Quantities for dealing with and protecting existing services where they are known.

The Contractor will, however, ensure that prior to construction all the necessary Record Drawings and Way-leaves for all services have been obtained and verified on site by the relevant Service Providers in his presence. The Contractor must request in writing the relevant Official to indicate the said services prior to commencement of work.

The Contractor shall take whatever extra precautions are required to protect all existing services from damage during the period of the Contract. Any damage to existing services indicated by the relevant service providers or other damage as a result thereof, shall be for the Contractor's account.

C3.1.5.2 SURVEY BEACONS AND BENCHMARKS

The Contractor shall be responsible for the preservation of all land survey, erf or other pegs, benchmarks and beacons. If damage or disturbance of any such pegs or beacons is caused by the operations of the Contractor or his subcontractors, the pegs are to be replaced by a Registered Land Surveyor at the cost of the Contractor. Benchmarks will be replaced by the Employer's Agent at the Contractor's expense.

Information regarding the position of all such pegs will be made available to the Contractor by the Employer's Agent on request. The Contractor is to ensure that no spoil is placed over an erf peg or benchmarks and that these are adequately protected for the full duration of the Contract.

Where disturbances of boundary pegs are unavoidable due to excavation or other operations adjacent to the pegs, the Contractor shall advise the Employer's Agent or his Representative immediately, and agreement is to be reached that the disturbance of the peg is unavoidable and a strict record of such disturbed pegs is to be kept. Such pegs are to be replaced by a Registered Land Surveyor as described above and the Contractor is to submit proof of the cost of replacement of pegs. The Contractor will be

reimbursed on a basis pro-rata to the total cost of peg replacement determined on completion of the Works.

C3.2: ENGINEERING

C3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX

Works designed by, per design stage:

Concept, feasibility and overall process	Employer
Basic engineering and detail layout to tender stage	Employer's Agent
Final design to approved for construction stage	Employer's Agent
Temporary works of Contractor	Contractor
Preparation of as-built drawings	Contractor / Employer's Agent

C3.2.2 DRAWINGS AND DOCUMENTS

The reduced drawings that form part of the tender document shall be used for tender purposes only.

The Contractor will be supplied with one full size drawing, one reduced drawing to fit A2 as well as an electronic pdf copy for construction purposes. These paper copies are issued free of charge and the Contractor shall only be provided additional copies on request and for his account.

Any information in the possession of the Contractor, which the Employer's Agent's representative requires for completing his as-built drawings, shall be supplied to the Employer's Agent's representative before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Employer's Agent. The Employer's Agent will supply all figured dimensions omitted from the drawings.

Document	Title	Comment
Volume 1	General Conditions of Contract (2015)	To be obtained by Contractor
Volume 2	The Standard Specifications for Road and Bridge Works for State Road Authorities (COLTO 1998 Edition)	To be obtained by Contractor
Volume 3 (1)	Book 1: Returnable Document	
Volume 3 (2)	Book 2: Project Document (This Volume)	
Volume 4	Book of drawings issued with Volume 3 for tender purposes	

C3.2.3 DESIGN PROCEDURES

The Contractor is responsible for the design of all temporary works required for the construction of the permanent works. This includes, inter alia, temporary access roads, temporary deviations, trench shoring, dewatering and temporary support systems.

C3.3: PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES

C3.3.1.1 Resources standards

Refer to the Tender Data in Part T1.

C3.3.1.2 Requirements

Refer to the Returnable Documents in Part T2.

C3.3.2 CONTRACT PARTICIPATION GOALS

C3.3.2.1 UTILISATION OF SMMEs

The Contractor shall be required to utilise SMME contractors in the execution of the works. It is a requirement that a minimum of **20%** of the contract value be subcontracted to SMME contractors.

C3.3.2.2 EMPLOYMENT OF LOCAL LABOUR

The Contractor shall be required to utilise local labour in the execution of the works. It is a requirement that a minimum of **5%** of the contract value be expended on local labour.

C3.3.2.3 LOCAL RESOURCES / ENTERPRISES

The Contractor shall be required to utilise local resources / enterprises in the execution of the works. It is a requirement that a minimum of **5%** of the contract value be expended on local resources / enterprises.

C3.3.3 PENALTY CALCULATION

Use of SMME Contractors

If the Contractor fails to substantiate that any failure to achieve the SMME Subcontractor Goal was due to quantative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor shall be liable to pay to the Employer a financial penalty (P) calculated in accordance with the following formula:

$$P = 1,30 \times (LM-LA) \times VA.$$

Where:

P = Rand value of penalty payable.

VA = Award value (Contract Price exclusive of VAT, and allowances for contingencies and escalation)

LM = SMME Goal % stated in the Project Document

LA = The SMME component % which the Employer's Representative certifies as

being achieved upon completion of the contract.

Use of Local Labour

If the Contractor fails to substantiate that any failure to achieve the Local Labour Goal was due to quantative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor shall be liable to pay to the Employer a financial penalty (P) calculated in accordance with the following formula:

$$P = 1,30 \times (LM - LA) \times VA.$$

Where:

P = Rand value of penalty payable.

VA = Award value (Contract Price exclusive of VAT, and allowances for contingencies and escalation)

LM = Local Labour Goal % stated in the Project Document

LA = The local labour component % which the Employer's Representative certifies as being achieved upon completion of the contract.

Use of Local Resources / Enterprises

If the Contractor fails to substantiate that any failure to achieve the Local Resource/ Enterprise Goal was due to quantative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor shall be liable to pay to the Employer a financial penalty (P) calculated in accordance with the following formula:

$$P = 1,30 \times (LM - LA) \times VA.$$

Where:

P = Rand value of penalty payable.

VA = Award value (Contract Price exclusive of VAT, and allowances for contingencies and escalation)

LM = Local Resource Goal % stated in the Project Document

LA = The local resource component % which the Employer's Representative certifies as being achieved upon completion of the contract.

C3.4: CONSTRUCTION

C3.4.1 WORKS SPECIFICATION

C3.4.1.1 Applicable Standards

The Standard Specifications for Road and Bridge Works for State Road Authorities (1998 Edition) as prepared by the Committee of Land Transport Officials (COLTO) are applicable to this Contract. It shall however be noted that reference is made in certain of the specifications to other standardised specifications which may or may not be included in this document. Where such specifications are not included, they shall however be deemed to be included in the Contract documents.

The Contractor shall always have available for reference on site a full set of the above specifications, together with any other to which they refer. These specifications shall remain the property of the Contractor but shall be made available to the Employer's Agent whenever required throughout the duration of the Contract.

In addition, the following Particular Specifications that are bound into this document will also apply:

- Section A: STANDARD AMENDMENTS ISSUED BY COLTO
- Section B: PROJECT SPECIFICATION AMENDMENTS
- Section C: OCCUPATION HEALTH & SAFETY SPECIFICATION
- Section D: HIV/AIDS AWARENESS EDUCATION SPECIFICATION
- Section E: LABOUR SPECIFICATION
- Section F: ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION SPECIFICATION
- Section G: SPECIFICATION FOR DEVELOPMENT OF SMME CONTRACTORS
- Section H: QUALITY MANAGEMENT PLAN

C3.4.1.2.1 The term "Project Specifications" appearing in any of the COLTO standardised specifications must be replaced with the terms "scope of work".

C3.4.1.2.2 The variations and additions to the specifications listed in C3.4.1.2.2 are as follows:

The Standard Specifications for Road and Bridge Works for State Road Authorities 1998, prepared by the Committee of Land Transport Officials, (COLTO), as amended, shall apply to this Contract. The amendments are those issued by COLTO and reproduced below, together with additional amendments as set out herein.

C3.4.2 SITE FACILITIES

C3.4.2.1 Facilities for the Employer's Agent

Site facilities as specified in the schedule of quantities are required. Site meetings will be held in the Contractor's site office and must make allowance to seat at least 20 people.

C3.4.2.2 Contractor's Camp Site

The establishment of all labour, plant and materials on site and all arrangements in this respect is the responsibility of the Contractor.

The Contractor shall provide within his own on-site facilities, a suitably furnished office or other venue capable of comfortably accommodating a minimum of twenty (20) people at site meetings. The Employer's Agent shall be allowed free use of such a venue for the conducting of any other meetings concerning the Contract at all reasonable times. The cost of providing the above facility will be viewed to be inclusive of the Contractor's establishment costs.

Before the erection of his camp, office, stores, plant and accommodation units or any facilities, the Contractor shall satisfy the Employer's Agent that he is familiar with and has taken due cognisance of any pertinent local by-laws, availability of services and statutory regulations. The Contractor's attention is specifically drawn to the regulations pertaining to the accommodation of labourers.

C3.4.2.3 Telephone and Communication Facilities

The Contractor shall provide and maintain a continuous means of on-site communication between his site supervision staff (i.e. the people responsible for the day to day running of the Contract) and the staff of the Employer's Agent's Representative.

C3.4.2.4 Security

The Contractor shall be responsible for the security of his own personnel and construction plant and for the security of his camp and laboratory, and no claims in this regard will be considered by the Employer.

C3.4.2.5 Water, Power Supply and other Services

The Contractor shall make his own arrangements concerning the supply of water, electrical power, and all other services for use at the site camps, as well as for all construction purposes. No direct payment will be made for the provision of water, electrical power, and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work.

C3.4.3 FEATURES REQUIRING SPECIAL ATTENTION**C3.4.3.1 Public Safety**

The Contractor shall always ensure that his operations do not endanger any member of the public as well as his own personnel. All works are to be carried out in accordance with the approved Occupational Health and Safety Plan.

C3.4.3.2 Adjoining Properties

The sites of the Works are surrounded by private properties. The Contractor shall exercise strict control over his employees to ensure that they do not trespass outside the road reserve or interfere in any way with the adjacent owners, tenants, and their properties. In addition, the Contractor shall liaise with the owners

regarding all matters that may affect them such as the provision of water and the like.

C3.4.3.3 Working in Confined Areas

Except where provided for in the Standard Specification and the Bill of Quantities no extra payment shall be made nor shall any claim for additional payment be considered for construction in confined areas. The omission of standard pay items from the Bill of Quantities shall be taken to be deliberate and any additional costs incurred shall be included in the bulk rate.

Sidewalk construction is not working in a confined area.

C3.4.3.4 Cut and fill Widening

The project mainly consists of improving the existing horizontal, vertical alignments, road profile and layer works. In certain cases, the existing cut / fill banks along the route will have to be widened in order to achieve the required profiles as indicated on the cross section. This operation of complying with the cross-section requirements shall not be considered as cut / fill widening and no additional remuneration shall be allowed.

Cut and fill widening shall strictly apply where the Employer's Agent specifically requires the typical cross section to be altered by having the embankment cut back or extended.

SECTION A: STANDARD AMENDMENTS ISSUED BY
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Notes to Tenderer

1. The Standard Specifications for Road and Bridge Works for State Road Authorities 1998, prepared by the Committee of Land Transport Officials, (COLTO), as amended, shall apply to this contract. The amendments are those issued by COLTO and reproduced in Section A, together with additional amendments as set out in Section B.
2. Where reference is made to the General Conditions of Contract and Sub-Clauses thereof in the abovementioned Standard Specifications, they refer to the appropriate edition of the 'General Conditions of Contract for Road and Bridge Works for State Road Authorities,' issued by COLTO (Clause 1115 of the Standard Specifications refers).

The General Conditions of Contract applicable to this contract are the "Conditions of Contract for Construction Works (Third Edition) 2015 (SAICE), as published by the South African Institute of Civil Engineering and the necessary amendments to the Standard Specifications have been made and included in the Project Specifications contained in this document.

3. The terms "Schedule of Quantities", (used throughout the Standard Specifications) and "Bill of Quantities", (used in all other documents forming part of this contract), and "Pricing Schedule" are synonymous.

As at 1 October 2016 no amendments have been issued.

SECTION B: PROJECT SPECIFICATION

Notes to Tenderer:

1. In certain clauses the Standard Specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains some additional specifications required for this particular contract.
2. The number of each clause and each payment item in this part of the project specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new clause or a new payment item which does not form part of a clause or a payment item in the standard specifications and which is included here, is also prefixed by B followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the standard specifications.
3. The Tenderer shall note that the COLTO Standard Specifications are based on the General Conditions of Contract for Road and Bridge Works for State Road Authorities (1998 Edition) (COLTO), prepared by the Committee of Land Transport Officials. Reference to specific clauses in this COLTO General Conditions of Contract shall need to be
4. exchanged for the equivalent clause in the General Conditions of Contract for Construction Works (Third Edition) 2015 (SAICE), as published by the South African Institute of Civil Engineering, as amended in the Contract Data (C1.2) of this document. The Employer assumes/accepts no responsibility for the Contractors' interpretation of which is the correct relevant clauses.

SECTION B: PROJECT SPECIFICATION

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SECTION 1500: ACCOMMODATION OF TRAFFIC

SECTION 1700: CLEARING AND GRUBBING

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SECTION 2100 : DRAINS

SECTION 2200: PREFABRICATED CULVERTS

SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE
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SECTION 5600: ROAD SIGNS

SECTION 8100: TESTING MATERIALS AND WORKMANSHIP

SECTION 8200: QUALITY CONTROL (SCHEME 1)

SECTION 1100: DEFINITIONS AND TERMS

B1111 CULVERT

Add the following to this Clause:

"Culverts are specified either as being prefabricated or of cast in situ concrete. Prefabricated culverts, together with their associated inlet and outlet structures are specified under Section 2200 while cast in situ concrete culverts are treated as structures subject to the 6000 Series."

B1115 GENERAL CONDITIONS OF CONTRACT

Replace Clause 1115 with the following:

"The General Conditions of Contract that govern this contract are the General Conditions of Contract for Construction Works, Third Edition (2015) published by the South African Institution of Civil Engineering, also referred to as GCC 2015.

Each definition in the COLTO General Conditions of Contract for Road and Bridge Works for State Road Authorities 1998 and in the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities 1998 that has an equivalent definition in the GCC 2015, shall be re-interpreted in terms of the GCC 2015, and, where applicable, shall be replaced by the equivalent definition from GCC 2015. A guide in this regard is shown in Tables B1115A and B1115B below."

Tables B1115A: COLTO GCC to GCC 2015

Reference to a Clause that refers to, or defines, a contractual term in either the COLTO General Conditions of Contract for Road and Bridge Works for State Road Authorities 1998 (COLTO GCC 1998) for the Standard Specifications for Road and Bridge Works for State Road Authorities 1998.		Equivalent reference to a Clause that refers to, or defines, a contractual term in General Conditions of Contract for Construction, 3 rd edition (2015) (GCC 2015), applicable to this Contract	
COLTO GCC Clause No	Referenced COLTO GCC defined term	GCC 2015 Clause No	GCC 2015 defined term
1(1)(b)	Appendix	1.1.1.8	Contract Data
1(1)(f)	Constructional Plant	1.1.1.6	Construction Equipment
1(1)(n)	Engineer	1.1.1.16	Employer's Agent
1(1)(o)	Engineer's Representative	1.1.1.17	Employer's Agent Representative
1(1)(p)	Letter of Acceptance	1.1.1.20	Form of Offer and Acceptance
4(3)	Letter of Acceptance, (written proof) of delivery of		Confirmation of Receipt (pro-forma appearing with the Form of Offer and Acceptance in GCC 2015)
1(1)(q)	Permanent Works	1.1.1.22	Permanent Works
1(1)(q)	Permanent Works	1.1.1.23	Plant
1(1)(s)	Project Specifications	1.1.1.28	Scope of Work

1(1)(t)	Schedule of Quantities	1.1.1.2	Bill of Quantities
1(1)(t)	Schedule of Quantities	1.1.1.25	Pricing Data
1(1)(w)	Special Conditions	1.1.1.8	Contract Data
1(1)(x)	Specifications	1.1.1.28	Scope of Work
1(1)(x)	Specifications	1.1.1.30	Site Information

Tables B1115B: COLTO STANDARD SPECIFICATION TO GCC 2015

COLTO Standard Specifications	Reference to COLTO General Conditions of Contract 1998 shown in the Standard Specifications for Road and Bridge Works for State Road Authorities 1998.		Equivalent reference in General Conditions of Contract for Construction, 3rd edition (2015), applicable to this Contract	
Clause No	Clause No	Description or Reference	Clause No	Description or Reference amended to
1115		Definition of GCC; special conditions of contract		Definition GCC 2015 in the Contract Data
1202	15	Construction Programme	5.6	Programme
1204		General reference to GCC		Applicable to GCC 2015
1206	14	Setting out of works		Not defined – see SANS 1921
1209 (a)		General reference to GCC		Applicable to GCC 2015
1209 (e)	52	Valuation of material brought onto site	6.10.2	Valuation of material brought onto site
1210	54	Certificate of practical completion	5.14.2	Issue Certificate of Practical Completion
1212 (1)	49	CPA on alternative designs	6.8	Adjustment in rates and/or prices
1215	45	Extension of time for completion due to abnormal rainfall	5.12.2	Some reasons for extension of Time
1217	35	Care of the works	8.2	Care of the works
1303 (ii)		General reference to GCC		Applicable to GCC 2015
1303 (iii)	49	Price adjustment Item 13.01 (a)	6.8	Adjustment in rates and/or prices
1303 (iii)	49	Price adjustment Item 13.01 (b)	6.8	Adjustment in rates and/or prices
1303 (iii)	53	Variations exceeding 20%	6.11	Variations exceeding 15 per cent
1303	12	Payment Item 13.01 (c)	5.3	Commencement of Works
1303	45	Payment Item 13.01 (c)	5.12	Extension of time for Practical Completion
1403 (c) (ii)	40 (1)	Variation for rented accommodation	6.4.1	Valuation of variations
1505	40	Variation for temporary drainage	6.4	Valuation of variations
Item 15.08	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Item 15.09	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Item 15.11	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Note (2)	40	Payment for prospecting for materials	6.6	Provisional sums and prime cost sums
3204 (b) (iii)	40	Payment for oversize material	6.4	Valuation of variations

3303 (b)	2	Engineer's decisions, with reference to materials classification	3.2	Functions of the Employer's Agent
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COLTO Standard Specifications	Reference to COLTO General Conditions of Contract 1998 shown in the Standard Specifications for Road and Bridge Works for State Road Authorities 1998.		Equivalent reference in General Conditions of Contract for Construction, 3 rd edition (2015), applicable to this Contract	
Clause No	Clause No	Description or Reference	Clause No	Description or Reference amended to
Item 44.06		General reference to GCC, PC Sums	6.6.2	General reference to GCC 2015, Prime Cost Sums
5803 (c)	40	Variation, for landscaping	6.3	Variations
5805 (d)	40	Variation, for grassing	6.3	Variations
Item 58.10	48	Payment for Extra Work	6.6	Provisional sums and prime cost sums
8103 (c)	40	Variation, for testing material	6.3	Variations
Item 81.02		General reference to GCC, Provisional Sums	6.6	General reference to GCC 2015, Provisional Sums and prime cost sums
Item 81.03	22	Clearance of site on completion, with reference to core drilling	5.15.1	Clearance of Site on completion

SAICE General Conditions of Contract 2015: Sub-clause 1.1 Definitions

Add the following new Definitions:

“1.1.1.35 **“Project Specifications”** means any specifications appearing under this heading and forming part of the Contract, and containing any amendments to, omissions from or additions to the Standard Specifications that may be required in connection with a specific project.”

“1.1.1.36 **“Special Conditions”** means any addition to, departure from or amendment of the General Conditions of Contract as set out in the Contract Data forming part of the Tender Documents.”

“1.1.1.37 **“Works Specifications”** means all specifications forming part of the Contract whether they appear in the Standard Specifications, the Project Specifications or on the Drawings, or be they instructions given to the Contractor, or any other specifications referred to in the above- mentioned Specifications.

B1155 WORK IN RESTRICTED AREAS

Delete the contents of Clause 1155 and replace with the following:

"Except where provided for in the Standard Specification and the Bill of Quantities no extra payment shall be made nor shall any claim for additional payment be considered for construction in restricted areas. The omission of standard pay items from the Bill of Quantities shall be taken to be deliberate and any additional costs incurred shall be included in the bulk rate.

Sidewalk construction is not working in a confined area.

Work scheduled within the Town of KSD has been classified as work to be done in restricted areas and all tendered

rates shall be considered to have made provision for the work restrictions."

Add the following additional clauses:

B1156 PROCESS CONTROL

Process control is the responsibility of the Contractor and refers to all testing required to be carried out on the Works in order to ensure that the completed permanent works comply with the specifications and drawings. All such testing will be subject to inspection and approval by the Employer's Agent.

Process control will be carried out at the cost of the Contractor.

B1157 ACCEPTANCE CONTROL

Acceptance control means whatever testing the Employer's Agent carries out over and above the process control testing already carried out in order to decide on the acceptability of any work submitted by the Contractor.

Process control tests can be used as acceptance control if the Employer's Agent is satisfied with the results as presented to him.

B1158 VALUE OF WORK DONE

The value of work done referred to in Section 1300 shall be defined as the total of the work done measured in the Bill of Quantities including items 13.01(a) to (c) (when calculated to include themselves), all daywork done, all work done due to variation orders and eighty percent of the value of all materials on site but excluding any payment made for Contract Price Adjustment and VAT.

B1159 COMMERCIAL SOURCE

A commercial source is a source of material for which the Contractor is responsible for proving compliance with all relevant specifications. The tendered rate shall include full compensation for all required testing, transport and processing. No overhaul will be paid.

Should the Contractor elect not to utilise material from the proposed sources and instead utilise an alternative source then all material products from such source shall be deemed to be as from a "commercial source" for purposes of responsibility of specification compliance and payment."

B1160 TESTING SPECIFICATIONS

In December 2016 the THM1 ceased to exist and was replaced by SANS 3001. All site Laboratories are required to perform testing according to the SANS 3001 test methods.

The Table to follow gives a breakdown of the TMH1 test method vs the SANS 3001 test method.

- Most of the methods are similar to the traditional TMH1 with minor changes and amendments. The moisture determination is intended for use throughout the SANS 3001 methods.
- Minor amendments have been made to rationalise apparatus dimensions such as mould sizes. The changes

to some of the sieve sizes appear to be significant but all are less than 7 % and do not affect the outcome as they give a slightly altered position on the grading curve.

- The MDD is different primarily because scalping of the sample on the 37.5 mm sieve is given as the reference method for preparing the sample, although the procedure for crushing the coarse material to pass the 20 mm sieve is also given.
- Concrete tests are omitted from this list as they are currently being reviewed by the SABS concrete subcommittee SC59A.

TMH1	SANS 3001	Description	Status	Apparatus	Sample	Procedure	Comments
GRAVELS - GR							
A1(a) & A5	GR1	Wet sieve and preparation of fines	Published Dec 2008	Sieve sizes rationalised	Similar	Similar, with < 0.075 mm incorporated	Sieve sizes e.g., 4.75 mm to 5 mm
A1 (b)	GR2	Dry sieve	Published Mar 2009	Sieve sizes rationalised	Similar	Dry only < 5 mm – sieve to 0.425 mm	0.075 mm fraction not determined
A6	GR3	Hydrometer	With SABS	Similar	Similar	Different – close to ASTM & BS	While the principles remain the same the test is more complicated
	GR5	Preparation of air-dried fines	With SABS				New
A2 & A3	GR10	Atterberg limits & linear shrinkage	Published Nov 2008	Similar	Similar	One point liquid limit, plastic limit and linear shrinkage	Reintroduces LS from old TMH1 Method same but splitting up LL methods
A2 & A3	GR11	Liquid limit only – refers to GR10 for plastic limit and linear shrinkage	Published Nov 2008	Similar	Similar	Two point liquid limit only	
A2 & A3	GR12		Published Nov 2008	Similar	Similar	Flow curve liquid limit only	
-	GR20	Moisture content	Published Nov 2008	Instead of describing moisture content method in each test method – provides generic for all situations			New
A7	GR30	Maximum dry density	Published Jun 2010	Similar	Allows for scalped > 37.5 (ref) or crushed < 20	Similar with greater detail of moisture content points	Differs in sample preparation of > 20 mm
	GR31	Maximum dry density (MDD) of stabilised material – laboratory mixed	Published Aug 2010	Similar to A7	Modified preparation	Similar to A7	Uses GR30 with modifications to allow for stabilisation

TMH1	SANS 3001	Description	Status	Apparatus	Sample	Procedure	Comments
A10(a)	GR35	Sand replacement field density	Draft	Similar	Similar	Similar	Minor amendments
A8	GR40	California Bearing Ratio (CBR)	Published Jun 2010	Similar	Scalped > 37.5	Similar – C effort 5 layers x 11 blows	Differs in sample preparation of > 20 mm
A9	GR41	CBR of Lime treated material	Draft	Similar	Similar	Similar to GR40	Uses GR40 with modifications to allow for stabilisation
A14	GR50	Preparation, compaction and curing of laboratory stabilised	Published Aug 2010	Similar	Similar to GR31 with curing details added	Similar to GR30	Principal difference is that curing details have been added
A14	GR51	Sample, preparation, compaction & curing of laboratory stabilised	Published Aug 2010	Similar	Similar	Similar but allows two MDD methods	Prescribes curing methods and provides alternative MDD methods
-	GR52	Sample and preparation of field cores	Published Aug 2010				New
A14	GR53	Unconfined Compressive Strength (UCS)	Published Aug 2010	Similar	Similar	Similar	
A16T	GR54	Indirect Tensile Strength (ITS)	Published Aug 2010	Similar	Similar	Similar	
A19	GR55	Wet-dry brushing by hand	With SABS	Similar	Similar	Similar	Same procedure but with greater detail provided
-	GR56	Wet-dry brushing by mechanised brushing	Draft				New
-	GR57	ICL or ICC of stabilised materials	Draft	Similar	Similar	Similar	Same procedure but with greater detail provided
A15(d)	GR58	Cement or lime content – back titration	Draft	Similar	Similar	Similar	
AGGREGATES – AG							
B4	AG1	Particle size analysis	Published Feb 2009	Sieve sizes rationalised	Similar	Similar	
B18(a)	AG2	Average least dimension (ALD) direct measurement	Published Feb 2009	Similar	Similar	Similar	
B18(b)T	AG3	ALD by computation	Published Feb 2009	-	-	Complex calculation	Old nomogram replaced with calculation procedure
B3	AG4	Flakiness index	Published Feb 2009	Similar	Similar	Similar	
B19	AG5	Sand Equivalent	Draft	Similar	Similar	Similar	
B1 & B2	AG10	Aggregate crushing value (ACV) & 10% FACT	With SABS	Similar	Similar	Similar	Procedure combines tests and determines loads for second and third points differently

TMH1	SANS 3001	Description	Status	Apparatus	Sample	Procedure	Comments
SABS 5848	AG11	Polished Stone Value (PSV)	Draft	Similar	Similar	Similar	New
SABS 5839	AG12	MgSO ₄ Soundness	Draft	Similar	Similar	Similar	Procedure similar but detail significantly revised
-	AG13	Venter test	With SABS				New - Based on COLTO 8107 (e)
-	AG14	Ethylene glycol durability	Draft				New
-	AG15	Ethylene glycol plus 10 % FACT	Draft				New
-	AG16	Durability mill index	With SABS				New
B14	AG20	Apparent and bulk density and water absorption > 5 mm	Published Sept 2011	Similar	Similar	Similar	
B15	AG21	Apparent and bulk density and water absorption < 5 mm	Published Sept 2011	Similar	Similar	Similar	Similar but permits alternative calculation of bulk density
-	AG22	Apparent density crushed stone base	With SABS				New - Based on COLTO 8108 (b)
SABS 5844	AG23	Particle and relative densities	Draft	Similar	Similar	Similar	
B17T	AG30	Water-soluble sulphates	Draft				Different – Use BS 1377-3:5
A22T	AG31	Acid-soluble sulphates	Draft				Different – Use BS 1377-3:5
A20 & A21T	AG32	pH and electrical conductivity	Draft	Similar	Sample < 2 mm instead of 6.7 mm	Similar	
B6	AG40	Organic impurities	Note 1				
B12	AG41	Soluble deleterious impurities	Note 1				
	AG42	Detection of sugar	Note 1				
	AG43	Shell content	Note 1				
	AG44	Deleterious clay content (Methylene blue)	Note 1				
Note: 1. Depends on SC59A subcommittee of SABS for Concrete							
NUCLEAR DENSITY GAUGES - NG							
-	NG1	Admin, handling and maintenance	Draft				New
-	NG2	Validation of standard calibration blocks	Draft				New
-	NG3	Calibration of a nuclear gauge	Draft				New

TMH1	SANS 3001	Description	Status	Apparatus	Sample	Procedure	Comments
-	NG4	Verification of a nuclear gauge	Draft				New
A10(b)	NG5	Determination of in situ density	Draft	Similar	-	Different	
BITUMEN – BT							
-	BT10	Ball penetration test for seals	With SABS				New
-	BT11	Texture depth test for seals	With SABS				New
-	B T12	Marvil water permeability test	With SABS				New – replaces COLTO 8109 (d)
TMH2	BT20	Certification of a binder distributor	Published Nov 2010				Replaces TMH2
TMH2	BT21	Validation of a binder distributor dip stick	Published Nov 2010				Replaces TMH2
TMH2	BT22	Power and road speed indicator tests for BD	Published Nov 2010				Replaces TMH2
TMH2	BT23	Pump system performance of a binder distributor	Published Nov 2010				Replaces TMH2
TMH2	BT24	Measurement of transverse distribution (Bucket test)	Published Nov 2010				Replaces TMH2
ASPHALT – AS							
Appendix to C2	AS1	Making of asphalt briquettes	With SABS	Similar with specified compaction block	Similar	Similar	Similar but with a number of small variations
C2	AS2	Determination of Marshall stability, flow and quotient	Published Nov 2011	Similar	Similar	Similar	Similar but with a number of small variations
C3	AS10	Bulk density and void content (Marshall)	Published Nov 2011	Similar	Similar	Similar	Similar but with a number of small variations
C4	AS11	Maximum voidless density and absorbed binder (Rice's)	Published Nov 2011	Similar	Similar	Similar	Similar but with a number of small variations
C7(b)	AS20	Binder content – extraction with organic solvent	Published Nov 2011	Similar	Similar	Similar	Similar but with a number of small variations
-	AS21	Binder content – ignition method					
C8T	AS22	Bitumen content of slurry	Draft	Similar	Similar	Similar	
C11	AS23	Moisture content in asphalt mix	Draft	Similar	Similar	Similar	

TMH1	SANS 3001	Description	Status	Apparatus	Sample	Procedure	Comments
PROCEDURES – PR							
-	PR1	Uncertainty of measurement, repeatability, reproducibility and bias	Published Dec 2008				New
-	PR2	Repeat, check or duplicate tests	With SABS				New
-	PR3	Proficiency - Round robin tests	-				New
-	PR5	Computation of SM ¹ , CSR ² , GM ³ and FM ⁴	Published Feb 2009				New - Computations extracted from a number of methods
-	PR10	Checking, handling & maintenance of sieves	Published Feb 2009				New

Notes

1. SM = Soil-mortar percentages (coarse sand, fine sand, coarse fine sand, medium fine sand, fine fine sand, silt and clay).
2. CSR = CSR - Coarse sand ratio (coarse sand fraction: soil fraction (minus 2 mm)).
3. GM = Grading modulus
4. FM = Fineness modulus

B1161 SABS SPECIFICATIONS

Where reference is made in this specification or the standard specifications to SABS specifications, the latest published national standard shall be applicable. Use:

[https://www.sabs.co.za/content/uploads/files/SABS%20Catalogue%20February%202012%20\(abridged\).pdf](https://www.sabs.co.za/content/uploads/files/SABS%20Catalogue%20February%202012%20(abridged).pdf)

for the most up-to-date versions of the various standards.

B1162 AGGREGATE SIZE

Where reference is made in this specification or the standard specifications to aggregate size, nominal aggregate size or maximum aggregate size, the aggregate size as listed shall be replaced with the new corresponding aggregate size as indicated in the following table:

Aggregate size	New aggregate size
26,5	28
19	20
13,2	14
9,5	10
6,7	7
4,75	5
2,36	2
1,18	1

B1163 COMPACTION

In December 2016 the THM1 ceased to exist and was replaced by SANS 3001. All site Laboratories are required to perform testing according to the SANS 3001 test methods.

Therefore, the standard for compaction efforts changed from Modified AASHTO Density as per TMH1 Test Method to Maximum Dry Density (MDD) as per SANS 3001. Where reference is made to compaction or of Modified AASHTO Density in the tender documentation or the standard specifications or wherever there is conflict between the tender documentation and the standard specifications, the SANS 3001 specification and terminology shall govern."

SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS
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B1202 SERVICES

Add the following to the second paragraph:

"All the known services inside the limits of the works are indicated on the drawings. The Contractor shall however, immediately inform the Employer's Agent's representative of any underground service which is not shown on the drawings and which he discovers during the contract."

Insert the following paragraphs after the fifth paragraph:

"All services which exist or are presumed to exist by the Contractor or the Employer's Agent must be searched for and exposed by the Contractor so that the Employer's Agent can take a final decision about possible protection or shifting.

It is also a condition of this contract that the Contractor notify the Employer's Agent in writing at least one week in advance of the intention to search and expose any existing services. During this period the Contractor must assist the Employer's Agent in gathering any information about these services."

Add the following after the sixth paragraph of Clause 1202 of the Specifications:

"The Contractor's attention is drawn to the relevant clauses of the General and Special Conditions of Contract regarding liability for damage to the works, or property, or injury to persons arising from the construction of the works. His attention is also drawn to Clause 8.6 of the General Conditions of Contract regarding insurance to be effected by the Contractor. Special attention is drawn to the exclusions in this insurance policy and particularly to the exclusions regarding consequential damage."

In the second paragraph (now the third paragraph), delete the word "utility" at the end of the second line.

In the final paragraph delete the second and third sentences starting with "Should" and replace with the following:

"All known services on the site have been shown on the drawings. Those requiring removal, re-alignment or temporary replacement have been identified. However, before any work can commence the Contractor shall verify the actual position of each service and bring to the attention of the Employer's Agent any service that is not recorded. The Contractor shall:

- (i) Give preliminary notice, in writing to the relevant service provider, that the services on the site will require removal or protection prior to works being carried out in the vicinity of each service. The Contractor shall advise the service provider of:
 - a) The number of services and their locations; and
 - b) the proposed dates when works will commence in the vicinity of each service.
- (ii) In addition to the above preliminary notice, give the service provider thirty days written notice of the intention to commence work in the vicinity of each facility.
- (iii) Upon completion of the work in the vicinity of each facility, the Contractor shall notify the service provider, in writing, that work is complete and the service may be reinstated.

Any delay resulting from the removal/replacement of a service shall not be the subject of a claim, it being deemed that the Contractor shall employ the services of the service provider as a subcontractor.

For further details and positions of these services refer to the Book of drawings, Book 1, layout plans.

Any cost of repairs, replacement and/or installation of services and equipment resulting from the Contractor's negligence or unauthorised action shall be to the Contractor's account."

Add the following to this Clause:

"The cost of alterations to services necessitated by the construction of the road will be borne by the Employer.

The Contractor shall allow all reasonable access to any authority or department for the purpose of maintaining, laying and/or altering any service cables or mains during the construction period.

- (a) Owing to the possible inaccuracy of records of existing services (watermains, electric cables, telephone cables, etc.) the Contractor shall locate services that may be affected by this Contract prior to the commencement of excavations.

Payment for the exposure of services by excavation will be on the basis of the tendered rates or, if no appropriate rate exists, on a Dayworks basis.

- (b) The Contractor shall not damage adjoining fences and buildings when depositing spoil and/or materials. All claims arising from such causes shall be settled by the Contractor.

The Contractor shall prevent damage to buildings, fences and other objects in the vicinity of the Works, as a result of the execution of this Contract. The Contractor shall supply and erect shoring, screens, barricades, temporary supports and other items necessary for preventing such damage."

B1203 ROAD INTERSECTIONS AND JUNCTIONS

In the first sentence of the first paragraph of this Clause insert ", public transport embayment" after the words "farm accesses".

Add the following Sub-clauses to this Clause:

"(a) Treatment at gravel road intersections and other accesses

The base layer as well as the surfacing shall end at the specified limit of construction shown on the drawings for proclaimed roads and such other roads as directed by the Employer's Agent.

Each of the underlying layers of the new road shall project a distance at least 600 mm beyond the termination of the layer immediately above it.

The void shall be backfilled with approved wearing course gravel or shoulder material compacted in layers by hand operated vibrating compactors.

Prior to placing the surfacing, a thickened edge shall be constructed consisting of a trench 300 mm wide and 300 mm

deep neatly excavated over the full width of the junction. This trench shall be filled with concrete, as specified in Section 2300 of the Specifications. The concrete shall be finished off level with the finished base and the surfacing for the new road shall be extended over this thickened edge.

B1204 PROGRAMME OF WORK

(a) General requirements

Add the following as a continuation of the first paragraph:

“In drawing up the programme the Contractor shall make allowance for the following:

- (i) Submission of contractual information such as sureties, guarantees and the Health and Safety File. Contractors shall provide sufficient time for the approval of the Health and Safety file. Any claims regarding the rejection of a health and safety file shall not be entertained. It will be expected from the Contractor to pro-actively conclude this activity.
- (ii) Commencement of the contractors control ground survey.
- (iii) Agreeing bulk earthworks quantities with the Employers Agent.
- (iv) All special non-working days defined in the Contract Data (C1.2).
- (v) The expected delays defined in clause B1215: Extension of time resulting from abnormal climatic conditions as a terminal float.
- (vi) The following restricted working conditions:
 - During the contractor's annual shutdown period between December and January (as per SAFCEC), the contractor shall maintain two-way traffic within the contract limits.
- (vii) Physical conditions and artificial obstructions and their effects.
- (viii) The accommodation and safeguarding of public traffic.
- (ix) Social facilitation and payment of affected individuals which are affected by the road re-alignment.
- (x) Dealing with, altering and installing services including submission of notifications to the relevant service providers.
- (xi) All the training requirements specified.
- (xii) The involvement of SMME contractors as subcontractors to the main contractor.
- (xiii) Expenditure on Local Resources / Enterprises and Targeted Procurement.
- (xiv) Meeting the requirements of the Environmental Management Plan (EMPI).
- (xv) The time needed for preparation and approval of the various mix designs specified in the relevant construction sections of the Scope of Works.
- (xvi) All other actions required in terms of this Contract.

This initial programme shall realistically account for the forecast cash flow within the defined contract period. If an alternative contract period is offered, the Contractor shall submit a separate programme with the alternative tender.”

Add the following paragraphs:

“c) Additional programme requirements

In addition to the requirements of clauses B1204(a) and B1204(b), and of clause 5.6 of the General Conditions of Contract, the programme of work shall include the following details:

- (i) A work breakdown structure that identifies all major activities.
- (ii) Scheduled start and end dates for each activity.
- (iii) Linkages between activities that clearly identify sequence, floats and critical path.
- (iv) Intended working hours (per day and working days per week) and resource allocations (plant and labour).
- (v) Production rates.
- (vi) Monthly cashflow projections.
- (vii) Key dates in respect of information required or due delivery.
- (viii) The contractor's payment weekends and special non-working days (end of year break as determined by SAFCEC).
- (ix) Detailed traffic accommodation proposal on which the programme is based.
- (x) A risk assessment schedule with mitigating plans of issues that could prevent the due completion date being met.

The contractor shall supply the programme in a format compatible with the Employer's Agent's software.

(d) Programme revisions

The programme will be reviewed at the monthly site meetings at which the contractor shall provide sufficient detail that will allow the comparison of completed work per activity against the current programme. The contractor shall indicate what resources and programme changes he intends to implement in order to remedy any activity that has fallen behind. The Employer's Agent may demand from the contractor a major revision of the programme. Such a revision shall be submitted for comment within 7 days of the demand." Use of selected subcontractors

In compiling the programme of work the Contractor shall make due allowance for the procurement of selected subcontractors and indicate clearly commencements dates for each subcontract.

B1205: WORKMANSHIP AND QUALITY CONTROL

Insert the following heading after the title:

"a) General:

Insert the following as sub-clauses after the first paragraph:

b) Quality Systems

The Contractor shall implement a quality assurance system that replicates an ISO 9002 and appoint a quality manager who shall ensure that members of the Contractor's staff comply with the requirements of the quality system. The quality system and the methods used to implement it shall be described in a quality plan produced by the Contractor. The quality manager shall be resident on site full time.

B1206: THE SETTING OUT OF WORK AND PROTECTION OF BEACONS

Add the following to the fourth paragraph:

The contractor shall submit to the Employer's Agent all setting-out information (including existing surveyed services) as well as proof of the checked setting-out information before work can commence.

Add the following at the end of the fourth paragraph:

“Road markings, particularly pointed islands and no overtaking lines are also elements of the road that require proper setting out. The Contractor shall prove to the Employer’s Agent that critical reference points have been satisfactorily recorded for later reinstallation before any work commences that will obliterate the existing markings.”

Delete “and of clause 14 of the general conditions of contract” in the sixth paragraph. Add the following paragraphs:

“The Contractor shall take care that property beacons, trigonometrical survey beacons or setting-out beacons are not displaced or destroyed without the consent of the Employer’s Agent. Property beacons and trigonometrical survey beacons that have been displaced or destroyed shall be replaced by a registered land surveyor, who shall certify such replacement.

The cost of replacing all beacons displaced or destroyed during the contract without the consent of the Employer’s Agent shall be the Contractor’s responsibility and included in the tender rates”.

B1207 NOTICES SIGNS AND ADVERTISEMENTS

Delete the last paragraph and replace with the following:

“All signboards erected in accordance with the drawings or as approved advertisements for the Contractor’s establishment, shall be removed at the same time as the Contractor’s de-establishment. Payment under sub- item 13.01 for the final instalment of 15 % of the tendered lump sum shall not be made unless all the advertisements, notices and temporary signs have been removed.”

B1209 PAYMENT

(b) Rates to be inclusive

In the first paragraph of this Sub-clause insert the following between the words “temporary work,” and “testing,”:

“complying with the OHS Act and in particular with its Construction Regulations (2014), providing the required health and safety measures,”.

Add the following to the first paragraph:

“VAT shall be excluded from the rates.”

(c) The meanings of certain phrases in payment clauses

(i) Procuring and furnishing (material)

Add the following:

“Payment for procuring and furnishing material from commercial sources shall include all transport costs, irrespective of distance hauled”.

Add the following sub-clauses:

“(g) Trade names

Where materials are specified under trade names, tenders must be based on those materials. Alternative materials may be submitted as an alternative tender and the Employer's Agent may, after receipt of tenders, approve the use of equivalent materials.

“(h) Payment Certificates

With reference to Clause 6.10 of the General Conditions of Contract, the Contractor shall, at his own expense, submit to the Employer's Agent three sets of A4-size paper copies of the monthly statement for payment.

“(i) Value Added Tax (VAT)

No value added tax shall be included in the Contractor's tendered rates or amounts. Payment of value added tax (VAT) shall be made a separate item in the Bill of Quantities Summary.”

“(j) Working in confined areas

Except where provided for in the Standard Specification and the Bill of Quantities no extra payment shall be made nor shall any claim for additional payment be considered for construction in confined areas. The omission of standard pay items from the Bill of Quantities shall be taken to be deliberate and any additional costs incurred shall be included in the bulk rate.

Sidewalk construction is not working in a confined area.

“(k) Split quantities

Wherever in the Pricing Schedule allowance has been made to price items of work for which a product or material is uncertain and quantities split between pricing items, the Employer reserves the right to choose whichever is the most appropriate or combination thereof, regardless of any adverse effect on the Contractor's costs and no claims for additional compensation shall be entertained.”

B1210 CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS

Amend the heading of this clause to read:

“CERTIFICATE OF PRACTICAL COMPLETION”

Replace the 1st paragraph with the following:

“Notwithstanding that there might be natural or programmed sections of the works that will result in them being completed in their entirety before other sections, no consideration shall be given to the issuing of certificates of practical completion for parts of the works. The use of any completed roadway or parts of the work, whether for unhindered use by the public or for accommodation of traffic while other parts are being constructed, shall not constitute use or occupation by the Employer.

The notice to the Employer's Agent, into clause 5.14.1 of the General Conditions of Contract applying for a Certificate of Practical Completion, shall include the Contractor's own list of what it considers to be the outstanding minor works that do not substantially affect the use of the Works. As justification that the issue of a Completion Certificate is warranted the

Contractor shall take note that the following sections of the works are to be completed to the satisfaction of the Employer's Agent:"

Add the following to sub-clause (e) before the semicolon:

"(including road studs)"

Add the following paragraphs after item (h):

"In addition to the above itemised sections of the works and regardless of the degree of beneficial occupation by the Employer, the outstanding works contained in the lists produced by the Contractor and the Employer's Agent shall be considered for practical completion only if the following criteria have been met:

- (i) The estimated cost to complete the listed outstanding work is less than 2% of the tendered value of work plus the cost of any variation or extra work orders, but excluding CPA and VAT.
- (ii) The written lists of outstanding items of work can be completed within 28 days of the lists having been issued.
- (iii) Any information in the Contractor's possession, which is required by the Employer's Agent and has been requested in writing, has been supplied.
- (iv) The Regional Manager of the Department of Mineral Resources (DMR) has issued written confirmation to the Contractor that they are satisfied with the final shaping to all quarries, borrow pits, stockpile areas, and spoil sites used or intended to be used under this contract. In the event this written confirmation is not obtained from DMR, acceptance by the Environmental Assessment Practitioner (EAP) will be sufficient for the issuing of the Certificate of Practical Completion.

If any of the listed criteria (i) through (iv) are not met at the date of the Contractor's notice of application, the Employer's Agent is to reject the application without providing any corresponding list of outstanding work. If an application is rejected, the Contractor shall rectify what has been identified as deficient before submitting a new notice of application."

B1213 VARIATION FROM SPECIFIED NOMINAL RATES OF APPLICATION OR NOMINAL MIX PROPORTIONS

Amend the last line of the second paragraph to read as follows:

"... materials, condition of the site and cement type (in order to comply with the durability requirements described in sub-clause B6404(h))."

B1214 CONTRACTOR'S ACTIVITIES IN RESPECT OF PROPERTY OUTSIDE THE ROAD RESERVE AND OF SERVICES MOVED, DAMAGED OR ALTERED

Add the following to Sub-clause (a):

- "(iii) any land outside the road reserve which the Contractor, with the approval of the Employer's Agent, wishes to temporarily use or occupy, for the purpose of a borrow pit, spoil area, haul or construction road, traffic diversion or stockpiling of material, will be temporarily expropriated by the Employer.

In all such cases the Contractor shall not be required to pay compensation to the owner of the land, nor will he give any undertaking or make any promises towards landowners in this regard.

- (iv) The Contractor shall be responsible for serving notice on the owner, in writing, of his intentions to use a borrow pit and the Employer's Agent shall be supplied with a copy of such notice. If applicable, the Contractor shall fence the area and access road according to the details of the temporary expropriation, prior to the excavation and removal of borrow materials.

In terms of the Roads Ordinance any borrow pit and, where necessary, the access road to it, shall be temporary expropriated before it can be used.

Replace Sub-sub-clause (b)(ii) with the following:

"Compensation, if applicable, for the land taken or for land temporarily used or occupied outside the area provided by the Employer."

Add the following to the last paragraph of sub-clause (d)

"Copies of these written statements shall be handed to the Employer's Agent before the final certificate will be issued. Failing to obtain these written statements from all landowners and authorities concerned, the Defects Liability Period will be extended including all conditions related to such an extension, until such time that all these agreements are obtained.

The obtaining of any such written statements will not relieve the Contractor of the execution of any of his obligations to the satisfaction of the landowner or authority concerned, and to the approval of the Employer's Agent".

Under Sub-clause (e) replace the opening paragraph with:

"Should the Contractor use land not provided by the Employer for the purpose of his own establishment, Employer's Agent's offices and laboratory, or storing of equipment or materials required for construction or disposal, it shall be subject to the following:",

and add the following Sub-sub-clauses:

- (vi) That lease agreements are concluded with the owner or owners of such land for the full period that such areas are required. The leases shall provide for possible extensions to match the duration of the Contract. The lease agreements shall also provide for the Contract being terminated by Contractor's default or liquidation and the resulting possibility for them to be taken over by a succeeding Contractor.
- (vii) That copies of lease agreements shall be submitted to the Employer's Agent prior to signature by the signing parties, and copies lodged with the Employer's Agent after signing. Notwithstanding the Employer's Agent's approval of the conditions of a lease the Contractor shall be solely responsible for adhesion to the terms of the agreements.
- (viii) Adherence to the principles of the environmental management plan and legal obligations."

Add the following Sub-clauses:

- "(f) Alterations to existing works**

Under no circumstances shall the Contractor alter or in any way interfere with existing works or overhead or underground services which are not to be relocated, replaced or removed. Where such works are required to be moved on account of unsuitable levels or situations, adequate notice shall be given to the Employer's Agent, who will arrange with the department and/or statutory authority concerned for the alterations to be carried out.

Where existing works are of such a nature that the Employer's Agent may require them to be moved by the Contractor, the cost of such work will be paid for at scheduled rates or as Daywork."

(g) Cleaning of public roads

Where material is spilled on public roads during the haul of material, the road shall be cleaned immediately."

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

Replace the expressions "Abnormal rainfall" and "rainy weather" with "abnormal climatic conditions" wherever these expressions appear in this clause.

In the second sentence of the third paragraph insert after the words "been granted" the following:

"but excluding the period of the Contractors holidays in December and January."

Extension of time under this clause will be calculated using Method (i). (Rainfall Formula)

Add the following:

"The rainfall records at the nearest representative station no 0129/06BA4 (Mthath 1888-1984) are reproduced in the table below, and the monthly averages (Nn and Rn) for the specified periods shall, for the purposes of this contract, be taken to be the normal rainfall for the site. The appropriate values of the constants in the rainfall formula shall be those given in the Standard Specifications. The following values of Nn and Rn shall apply:

Add the following:

"Should wind chill fall below 6 °C and the wind speed increases above 6.94 m/s, the Contractor shall cease production of layers on the section of road affected.

Month	Rn (mm)	Nn (days)
January	143.8	4.7 (3.5)
February	137.9	3.9
March	153.9	4.4
April	96	2.5
May	60.7	1.6
June	37.1	1
July	47.1	1.3

August	52.4	1.5
September	99.3	2.5
October	126.6	3.7
November	186.3	4.7
December	132.8	4.1 (2)
TOTAL	1120	30.8

* The figures shown in brackets are the 'n' days of rain expected in December/January but reduced to take account of the standard construction break over the Christmas/New Year period.

**AVERAGE AND EXTREME MAXIMUM AND MINIMUM TEMPERATURES
FOR MTHATHA STATION NO. 0129/06BA4**

Month	Temperature		Ave. of Monthly Extremes	
	Max (max)	Min (min)	Max (max)	Min (min)
January	25.1	19.6	29	15.8
February	25.4	19.9	28.8	16.2
March	24.8	19.2	28.8	15.2
April	24	17.6	29.4	13.8
May	23.1	15.7	29.8	11.6
June	22	14	28.1	10.1
July	21.4	13.4	28.6	9.7
August	21.1	13.9	29.1	9.8
September	21.2	15	29	10.5
October	21.7	16	27.4	11.6
November	22.9	17.3	27.1	13.1
December	24.3	18.7	28.2	14.5

B1216 INFORMATION FURNISHED BY THE EMPLOYER

Add the following before the first paragraph:

"The reduced drawings that form part of the tender document (Volume 4: Book 1) shall be used for tender purposes only.

The Contractor will be supplied with one (1) full size paper copy and one (1) reduces copy and 1 pdf copy of each of the construction drawings. These paper copies will be issued free of charge and the Contractor shall only be provided additional copies on request and for his account.

Any information in the possession of the Contractor, which the Employer's Agent's representative requires for completing his as-built drawings, shall be supplied to the Employer's Agent's representative before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Employer's Agent. The Employer's Agent will supply all figured dimensions omitted from the drawings.

The levels given on drainage/structural drawings are subject to confirmation on site, and the Contractor shall submit all levels to the Employer's Agent for confirmation before he commences with the construction of drainage and/or structures. The Contractor shall also check all clearances given on the drawings and shall inform the Employer's Agent of any discrepancies".

Only the first and as-built set of construction drawings shall bear the signature of the Employer and the Employer's Agent for contractual purposes. Any drawings issued with a formal transmittal slip shall be considered contractual even if such drawings have not been signed by the Employer or the Employer's Agent".

Add the following after the second paragraph:

"Drawings and quantities regarding the distribution and extent of repair work items were compiled and calculated to the best of the Employer's Agent's knowledge and available information at the time of the design and could be subject to significant variations at the construction stage. Such variations shall, however, not form grounds for a claim by the Contractor"

B1217 PROTECTION OF THE WORKS AND REQUIREMENTS TO BE MET BEFORE CONSTRUCTION OF NEW WORK ON TOP OF COMPLETED WORK IS COMMENCED

Add the following:

"(h) Prior to the start of any excavation in the existing pavements on any part of the works, the Contractor shall submit to the Employer's Agent for approval a method statement for the execution of that part of the work. The Contractor is responsible for the protection of the underlying pavement layers and the drying out and/or keeping dry of such excavations. The Contractor's program shall make provision for the speedy backfilling of the excavations and the drainage thereof if inundation cannot be prevented.

The Contractor shall at his own cost be responsible for the repair of pavement layers, which have been damaged due to his own works or his neglect to submit his planning to the Employer's Agent for approval or to adhere to approved precautionary measures.

B1219 WATER

Add the following:

"The Contractor must identify suitable water sources. All water sources utilised shall be tested for suitability once the Contractor has established on site". Water for use on site other than municipal, shall be subject to the required permit from DWS. This shall include such extraction points as rivers, dams, streams, and boreholes. Use Table B1219 below to determine the suitability of water for construction purposes.

Table B1219: Water classification for Construction Testing

		Water Quality Classification Code						Method
		H0	H1	H2	H3	H4	H5	
Property	Unit	Pure water (AR)	Clean water (Rain)	Treated water (Municipal)	Silty (muddy) water with low salt content	Highly mineralised chloride sulphate water (brackish)	Waste brack, sewage, marsh, sea, etc. water	
PH*	-	7.0	5.7 – 7.9	4.5 – 6.5	4.5 – 8.5	9.0	-	SABS M113 SM 11 - 1990
Dissolved solids*	ppm	0	1000	1500	3000	-	-	SABS 213 SM213 - 1990
Total hardness*	-	None	None	Temporary	Temporary	Permanent	-	SABS 215 SM 215 – 1971
Suspended matter	ppm	0	2000	2000	5000	-	-	SABS 1049 SM 1049 – 1990
Electrical conductivity	mS/m	0	200	200	500	-	-	SABS 1057 SM 1057 – 1982
Sulphates (SO4)	ppm	0	200	300	500	1000	-	SABS 212 SM 212 – 1971
Chlorides (Cl)	ppm	0	500	1000	3000	5000	-	SABS 202 SM 202 – 1983

Alkali Carbonates (CO ₃) & Bicarbonates (HCO ₃)	ppm	0	500	1000	1000	2000	-	SABS 241 – 1999
Sugar	-	Negative	Negative	Negative	Negative	Negative	-	SABS 833
Quality of water required	Untreated layer works						Investigate the effect on the quality of the material	
	Chemically treated layer works					Investigate the effect on the quality of the material		
	Concrete mass					Investigate the effect on the quality of the material		
	Concrete Prestressed			References: 1. Concrete Technology – Dr S Fulton (1989) 2. Materials Manual (PAWC)				
	Slurry & emulsion							
	Soil/gravel Tests							
	Chemical or control tests							

* A primary property. The quality of the water is that quality where all three of the primary properties are within the limits.

! The tabulated single values are maximum value except in the case of the pH value for pure water, which must be 7.0

B1222 USE OF EXPLOSIVES

Add the following sub-clauses:

“h) Definitions

- (i) **“Specified excavation or Payment line”** means the excavation profile given on the Drawings or determined by the Employer’s Agent for the Works, within which no unexcavated or loose material shall occur after the excavation is complete except as allowed within the specified tolerances. It is also the line to which payment for excavation will be made.
- (ii) **“Pre-splitting”** comprises drilling a line of closely spaced parallel holes of appropriate diameter, spaced not more than ten times the hole diameter or 600mm, whichever is the smaller and charging the holes with an appropriate amount (decoupled if necessary) and type of explosive to shear the rock, forming a surface along the line of drill holes.

Either all the holes in a presplit line shall be drilled, charged and detonated simultaneously prior to drilling the production holes for the excavation adjacent to the presplit line, or pre-splitting shall be accomplished by delaying detonation in the production holes to allow the presplit holes to fire first. The first line of production holes next to the presplit face shall be lightly charged to ensure that the presplit face is not damaged when the charges in the production holes are detonated.

- (iii) **“Smooth blasting”** comprises the drilling of a number of closely spaced parallel holes along the required excavation surface, with a suitable burden/spacing ratio, loading all the holes lightly with a uniform continuous charge of small diameter explosive and detonating all these charges simultaneously, after the detonation of the main production blast.
- (iv) **“Line Drilling”** comprises drilling a line of holes of appropriate diameter spaced not more than twice the hole diameter to form a surface of weakness along which the rock will break. Blasting is not permitted in the line drilled holes, and the first line of production holes next to the line drilled holes shall be lightly charged to avoid damage to the line drilled break surface.
- (v) **“Cushion Blasting”** comprises the separate removal of a protective zone of rock which has been purposely left within the specified limits of excavation for flat areas and shallow slopes. Drilling for cushion blasting shall consist of a regular pattern of holes at appropriate spacings and angles and to accurate depths.

The holes shall be lightly charged and detonated in relays to lift the rock progressively to form the final excavated surface without shattering the surrounding rock.

- (vi) **“Overbreak”** means any excavation area which extends beyond the payment line, irrespective of the reason for such excavation.

i) General

A copy of all certificates issued to workmen to permit them to undertake blasting, and to the Contractor to cover the purchasing, storage and transport of explosives shall be handed to the Employer’s Agent before any blasting work is undertaken.

The Contractor shall submit to the Employer's Agent at least 28 days before the commencement of any excavation work, full details of his proposed methods and sequence of excavation and programme for the use of explosives.

Within 2 weeks of receipt of the proposals, the Employer's Agent shall indicate acceptance in part or in whole, in writing, to the Contractor. The Employer's Agent reserves the right to reject the proposals if, in his opinion, undesirable damage to permanent rock surfaces or existing structures will result from carrying out the blasting as proposed. If acceptance is withheld, new proposals in whole or in part shall be submitted. No drilling or blasting shall be carried out in areas for which the proposals have not been accepted by the Employer's Agent, and any changes to the accepted methods shall be subject to the Employer's Agent's approval.

The work shall be programmed so as to minimise blasting adjacent to previously constructed sections of the Works.

Where blasting is necessary every precaution including the use of blast mats, timber boarding or other means shall be exercised to protect the Works and persons, animals and property in the vicinity of the Site. The Contractor shall accept responsibility for all injury or damage occasioned by any blasting operations and shall make good such damage without any additional payment.

The Contractor shall, in particular, note the requirement that he must limit to the maximum extent practicable the spillage of material from surface excavations, whether by blasting or other means. To this end the Contractor shall take all necessary precautions including, if necessary, covering the rock prior to blasting with sufficient loose material to prevent the blasted material being thrown. If, however, during the course of excavation on a hillside, the Employer's Agent is of the opinion that insufficient precautions are being taken to minimise the spillage of material, he may instruct the Contractor to adopt further measures to reduce the spillage. No separate payment will be made for any such measures required.

Each separate blast shall be designed in accordance with modern blasting practice to break out the rock with the minimum explosive force. Full details of each blast shall be submitted to the Employer's Agent for scrutiny not later than 24 hours prior to the commencement of drilling for that blast, unless such blast is unchanged from the previous one. The details shall include the location, depth and area of blast holes, the type, strength, amount, column load and distribution of explosives to be used per hole, per delay and per blast, the sequence and pattern of delays, the maximum expected level of shockwaves on adjacent structures, and the description and purpose of any special methods to be adopted by the Contractor. The role and interaction of amplitude, resonant frequency, duration and precise electronic detonators is most important.

The consent by the Employer's Agent to any blasting proposals shall not relieve the Contractor of his responsibilities under the Contract and the law.

Should the Contractor excavate to dimensions in excess of those specified or instructed by the Employer's Agent, whether to remove damaged material or for reasons of safety or for his own convenience, he shall at his own expense and when required by the Employer's Agent, fill in the excess excavation with concrete or sprayed concrete of approved quality or with other material approved by the Employer's Agent, or carry out additional trimming to the satisfaction of the Employer's Agent.

The Contractor shall provide the Employer's Agent each day with a copy of the record for the previous day's excavations. Where applicable the following data shall be recorded for each working area together with other such data as the Employer's Agent may request:

- location of the excavation and position within the excavation,
- drilling pattern,
- type and amount of explosive used, including blasting pattern and delays used,
- details of rock support,
- surface area of classification of labour and plant,
- number and classification of labour and plant,
- unusual occurrences, rock falls, unstable or soft ground and inflows of water,
- progress, delays and reasons for delays,
- name and permit number of blaster,
- date, and
- distance of blasts to structures and existing services.

j) Quality of Excavated Surface

Unless otherwise instructed by the Employer's Agent all blasting work shall be carried out using controlled blasting techniques to minimise any damage to the final profile.

Use shall be made of approved special explosives and/or blasting techniques which will minimise blasting induced fractures, or disturbance, on the rock faces outside the excavation line so preserving the rock in the soundest possible condition. No separate payment will be made for cushion blasting. The cost of using cushion blasting techniques shall be included in the rates for excavation.

The surface after blasting shall exhibit a regular fracture plane between barrels without back break and with half barrels visible over the major portion of the surface. The surface shall be scaled down of all loose and hollow sounding rock to leave a solid, intact surface. Light charges shall be used for enlarging or correcting the excavated profile and also for excavating trenches.

If in the opinion of the Employer's Agent, the methods of blasting are at any time causing excessive or undesirable disturbance of the rock mass surrounding the excavated space, he may order the Contractor to change his methods of blasting and/or carry out blasting trials until the desired results are achieved. No additional payment shall be made for any change or further trials ordered by the Employer's Agent or any delays resulting there from.

The spacing of holes and explosive charges shall be adjusted so that a minimum of oversize material is produced (a maximum particle size of 600mm). The Employer's Agent shall have the right to order the Contractor to adjust his blasting pattern and/or carry out secondary blasting at his own cost, should he be of the opinion that the Contractor is not taking sufficient care to produce rock of the required size.

k) Monitoring of Blasts

The Contractor shall supply and operate an approved tri-axial particle velocity meter equipped with a permanent paper trace output, which shall be used as and where directed by the Employer's Agent to monitor blasting work.

The paper trace output records shall show the time and location of each blast, the type and amount of explosive used, together with any other relevant data.

l) Notification of Blasts

Prior to any blasting, 7 days' notice is to be given to the Employer's Agent, relevant authorities and the media. The Contractor shall further notify the Employer's Agent of the intention to blast at least 24 hours before that operation is carried out. The notification shall show the location of and the intended time of each blast and the name of the licensed blaster and shift foreman responsible.

The Contractor shall distribute written notification to all organisations on site, and relevant authorities, 24 hours prior to undertaking blasting. Any delay or postponement of any blasts shall be notified to all organisations immediately. The firing of explosives shall be restricted as detailed in Item B1222(s) of this specification.

m) Blasting near Structures

The amount of explosives that may be detonated shall not result in a ground vibration with a peak particle velocity in excess of 25mm/sec at the nearest point of any part of Permanent Works. Where circumstances dictate, such as when blasting near to partially cured concrete, the peak particle velocity permitted may be reduced by the Employer's Agent.

Blasting shall not be carried out within 10m of any Works, unless otherwise agreed to in writing by the Employer's Agent.

In each and every case where the Contractor wishes to blast within 50 m of a structure, he shall prepare a proposal for this blasting and submit it to the Employer's Agent for consent. No blasting work of this nature may be carried out without the written consent of the Employer's Agent. Single-hole firing between firing holes at 8ms between firing holes is recommended. The Contractor is to make a photographic record of every structure within a 500 metre radius of the blast.

No separate payment will be made for any restrictions regarding blasting near structures which may be imposed by the Employer's Agent in terms of the Specifications.

n) Controlled Blasting

Controlled blasting methods shall comprise pre-splitting, smooth blasting, line drilling or cushion blasting techniques.

All charges shall be accurately made up and inserted into the holes at the correct spacing, and all holes shall be correctly stemmed and connected in the correct sequence, with detonators being correctly delayed.

If at any time the methods of drilling and blasting do not produce the desired results of a uniform profile and shear face without overbreak, all within the tolerances specified, the Contractor shall be required to undertake tests as until a technique is arrived at that will produce the desired results.

o) Drilling

In all controlled blasting, drilling accuracy of perimeter holes is of prime importance and the Contractor shall take particular care and make use of sight lines and guide rails in surface work to control the alignment and depth of blast holes. Holes which are likely to protrude more than 100mm beyond the excavation profile, shall not be charged up, but shall be redrilled.

The blast pattern shall be accurately set out and holes shall be collared within 50mm of the required position. Holes which are over drilled shall be fully stemmed to the required depth before charging up takes place.

The length of perimeter holes for any individual lift shall not exceed 10m or any lesser depth detailed on the drawings. All perimeter holes for surface blasting shall be drilled to a depth of 1m below the bottom of any production holes adjacent to the perimeter plane.

The drilling rig must be available for the full duration of the charging process and may only leave when the charging process is complete.

p) Use of Explosives

Both cartridge and bulk explosives may be used where appropriate.

In controlled blasting the type, size, decoupling and charge concentration of perimeter and bulk charges shall be within established parameters unless otherwise proven acceptable by site trials.

The bottom charge of a pre-split hole shall not be larger than the line charges unless otherwise directed. The top charge of the pre-splitting hole shall be placed far enough below the collar to avoid over breaking the final profile.

Adequate stemming shall be used to avoid blow-outs.

q) Checking and Correcting the Excavated Profile

The excavated profile shall be checked for line, level and under break using methods approved by the Employer's Agent. No projections of rock shall protrude within the payment line, except as allowed within the specified tolerances.

The Contractor shall submit his proposals for removing any under break to the Employer's Agent for his consent prior to carrying out any such work of removal. Any work executed or delays, which are due to the Contractor having to re-excavate under break and then re-install support shall be carried out without additional payment, and no extension of time will be allowed for this work.

r) Accommodation and Protection of Existing Services and Infrastructure

In the event of the laid-down vibration parameters as detailed in (m) above being exceeded or in the event of a valid recording not being made available as stipulated above, the Employer's Agent reserves the right to ascertain by whatever means, whether damage was caused by the blast to the service or structure. All costs incurred in establishing such possible resultant damage and the repair thereof will be to the Contractor's account.

Cover blasting shall be used in the vicinity of overhead services (e.g. telephone and power lines) where overhead services may be damaged or affected by blasting activities. The cover blasting shall be such that it sufficiently protects overhead services to prevent any damage to such services.

s) Blasting Restrictions

In addition to any statutory requirements the firing of explosives will, unless otherwise approved by the Employer's Agent in writing, be restricted to between 10:00 and 15:00, Monday to Thursday."

B1224 THE HANDING-OVER OF THE ROAD RESERVE

Add the following:

“The entire road reserve as well as all other roads within the construction limits of the contract will be handed- over to the Contractor on the issuing of the instruction to commence work. The Contractor shall then be responsible for the accommodation of traffic and all routine maintenance of these roads from the date of the handing-over of the site until the date of issue of the certificate of completion of the works.

Once the certificate of completion of the works has been issued the responsibility for normal maintenance of the road (e.g. collection of litter, clearing of drains, repair of road signs damaged by the public, etc.) shall revert back to the KSD Municipality Engineering Manager. Upon the handing-over of the site the Contractor shall immediately assume responsibility for the road reserve within the limits of this Contract as set out in the specifications.

Prior to the commencement of work the Contractor and the Employer's Representative shall together carry out a joint inspection of the road section. During such an inspection, notes shall be made of all damaged fences, guardrails, signs and any other notable problems or features that exist at the time of hand-over. The following matters should be agreed at the time of handing-over:

- (1) The limits, lengths, widths and areas of construction.
- (2) The location of kilometre markers and reference beacons.
- (3) The scope of remedial/repair or preparatory work measures to be executed by the Contractor.
- (4) The location of stockpile areas and the responsibilities of the Contractor with regard to the road reserve area and the stockpile sites (fencing, re-establishment, height of stockpile, etc.).
- (5) The method of accommodation of public traffic with regard to safety, sight distances, interference with existing road signs and road markings both within the work area and providing advance warning before the work area.
- (6) The method of construction and supervisory control measures.

B1229 SABS CEMENT SPECIFICATIONS

Add the following:

“Where reference is made in this specification or the standard specifications to the cement specifications, e.g. SABS 471: Portland cement and rapid hardening Portland cement, it shall be replaced with the new specification:

SABS EN 197-1 “Cement compositions, specifications and conformity criteria Part 1: Common cements”.

Add the following new clauses:

“B1230 MATERIALS

(a) General

The Contractor, when using materials that are required to comply with any standard specification, shall, if so ordered, furnish the Employer's Agent with certificates showing that the materials do comply with this specification.

Where so specified, materials shall bear the official mark of the appropriate authority. Samples ordered or specified shall be delivered to the Employer's Agent's office on the site free of charge.

Where materials are specified under trade names tenders must be based on these materials. Alternative materials may be

submitted as alternative tenders and the Employer's Agent may, after receipt of tenders, approve the use of equivalent materials. The tender must be clearly marked as an alternative tender, failing which the tender may be rejected.

Unless otherwise specified, all proprietary materials shall be used and placed in strict accordance with the relevant manufacturer's current published instructions. Agrément certified products shall be used and placed in accordance with its Agrément certification criteria.

Unless anything to the contrary is specified, all manufactured articles or materials supplied by the Contractor for the permanent works shall be unused.

Any materials excavated or present on the site or within the road reserve, or in borrow areas shall not become the property of the Contractor, but will be at his disposal only in so far as they are approved for use on the contract, unless otherwise indicated in the project specification.

Existing structures on the site shall remain the property of the Employer and except as and to the extent required elsewhere in the contract, shall not be interfered with by the Contractor in any way.

Materials to be included in the works shall not be damaged in any way and, should they be damaged on delivery or by the Contractor during handling, transportation, storage, installation or testing they shall be replaced by the Contractor at his own expense.

All places where materials are being manufactured or obtained for use in the works, and all the processes in their entirety connected therewith shall be open to inspection by the Employer's Agent (or other persons authorised by the Employer's Agent) at all reasonable times, and the Employer's Agent shall be at liberty to suspend any portion of work which is not being executed in conformity with these specifications.

The Contractor shall satisfy himself that any quarry selected for use provides the necessary mined material in accordance with the specification.

(b) Banned materials

No tar fluid products shall be used in the construction works.

B1231 MIX DESIGNS

Before commencing with certain construction activities, the Contractor shall, except where specified otherwise in the relevant construction sections in the Scope of Works, apply the following procedures with regards to mix designs:

- Taking and submitting samples of the relevant materials.
- Undertake the required mix design(s) or allow the Employer's Agent to undertake them.
- Produce, where required, laboratory, production/plant and/or trial mix(es).
- Undertake the required adjustments to the mix design(s) and reproduce required laboratory, production/plant and/or trial mix(es).
- Complete trial section(s) where required.
- Await the Employer's Agent's approval of the mix design(s) and trial section(s).

B1232 PENALTIES FOR OVERLOADING OF CONSTRUCTION VEHICLES

The contractor shall ensure that trucks used to haul construction materials are not overloaded and the legal axle loads are not exceeded. Before any construction materials can be transported, the contractor must provide the Employer's Agent

with the certified carrying capacity of each truck intended for the purpose of transporting the construction materials. The contractor shall provide the Employer's Agent with a weighbridge ticket before discharging/off-loading the materials.

Any truck that is overloaded shall not be allowed to discharge/off-load its load and shall return to the depot/batching plant for adjustment of the load. In addition, a penalty shall be applied for the overload."

For the purposes of the calculation, the so called 5% grace shall not be used. The following example is provided:

Weight of vehicle certified by a calibrated weighbridge	=	6 tons
Maximum carrying capacity certified by a calibrated weighbridge	=	8
tons Gross vehicle mass	=	14 tons
Actual Load (Weighbridge ticket)	=	14.6 tons
Overload factor	=	0.6 tons

Contractors rate tendered under applicable payment item = R350/unit Penalty

= 2 x R350/unit x 0.6 x distance hauled(km)

= R 420.00 x distance hauled (km)"

Penalty payments will be deducted from the front page of interim payment certificates."

B1233 WORK TO BE DONE BY NOMINATED SUBCONTRACTORS

a) Electrical Works

The main contract will remain responsible for all electrical works and will schedule and assign work packages.

The main contractor will be responsible for the following works:

- All cable work included excavation, backfilling and connections to the streetlights, mini substations and other as required, but excluding sleeves.
- The supply, delivery and installation of mini substations complete.
- The supply, delivery, installation and commissioning of lighting poles and masts excluding the foundation bases for sections where the F-Shape barriers are provided.
- Removal of existing light fittings and poles as well as existing overhead line poles, and delivery to stores of the relevant municipality.
- Termination of existing overhead lines and delivery of redundant material to stores of the relevant municipality.
- Installation of sleeves by excavating and backfilling and proofing.
- Installation of sleeves by drilling underneath existing roads and proofing.
- Provision draw wires in all sleeves,
- Complete construction of concrete bases for the lighting poles and masts for F-Shape barrier sections.
- Construction of manholes for the electrical cables where required.
- Accommodation of traffic, including the provision and erection of temporary road signs.

Works relating to the electrical requirements and constructed by the main contractor, will be paid in other items elsewhere in the Pricing Schedule.

B1234 MEASUREMENT AND PAYMENT

Provision has been made in this Section for any works associated with the removal and reinstatement of existing services which may be affected by the Works and for any compensation issues which may arise. The Contractor will generally not be required to carry out the work on telephone and power lines, but will pay the service provider concerned and be reimbursed through the Contract. The Contractor may have to carry out work in connection with the relocation of water pipes.

Provision is also made under this section for the Project Liaison Officer (PLO)

No payment will be made for any item under this section without the written authorisation and approval of the Employer's Agent and Employer. The following payment items shall apply.

Item	Unit
-------------	-------------

B12.01 Community Liaison Officer (CLO)

- | | |
|---|----------------------------|
| (a) Community Liaison Officer cost | provisional sum (Prov Sum) |
| (b) Handling cost and profit in respect of sub-item B12.01 (a)..... | percentage (%) |

A provisional sum is provided for the cost of community liaison, which shall include the salary of the Liaison Officer for the duration of the Contract, as well as costs with respect to the provision of use of a cell phone for the duration of the contract. The Liaison Officer will not be required on a full-time basis and this provisional sum shall be expended as approved by the Engineer.

The tendered percentage is a percentage of the amount actually spent under sub item B12.01 (a), which shall include full compensation for the handling costs and the profit of the Contractor."

Item	Unit
-------------	-------------

B12.02 Project Steering Committee (PSC)

- | | |
|--|----------------------------|
| (a) Payment of expenses/disbursements to the members of the PSC..... | provisional sum (Prov Sum) |
| (b) Handling cost and profit in respect of sub items B12.02 (a)..... | percentage (%) |

Payment of the provisional sum provided in sub item B12.02(a) is to reimburse members of the PSC for costs of travelling and subsistence for each meeting attended.

Item	Unit
-------------	-------------

B12.03 Relocation and reinstatement of Electricity overhead power lines and/or underground cables

- | | | |
|-----|---|----------------|
| (a) | Direct payment to service provider or its agent..... | (Prov Sum) |
| (b) | Handling costs and profit in respect of B 12.03 (a) | Percentage (%) |

Expenditure under this item will be made in accordance with the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under Item B 12.03 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying Eskom or its appointed agent for carrying out the work.

Item	Unit
-------------	-------------

B12.04 Relocation and reinstatement of Telkom/Fibre overhead phone lines and / or underground cables

- | | | |
|-----|---|----------------|
| (a) | Direct payment to TELKOM or its agent | (Prov Sum) |
| (b) | Handling costs and profit in respect of B 12.02 (a) | percentage (%) |

Expenditure under this item will be made in accordance with the general conditions of contract. The tendered percentage is a percentage of the amount actually spent under Item B 12.04 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying Telkom or its appointed agent for carrying out the work.

Item	Unit
-------------	-------------

B12.05 Relocation and reinstatement of water and sewer lines belonging to the local authority, institution or community

- | | | |
|-----|---|----------------|
| (a) | Direct payment to the authority or its agent | (Prov Sum) |
| (b) | Handling costs and profit in respect of B 12.05 (a) | percentage (%) |

Expenditure under this item will be made in accordance with the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under Item B 12.05 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying the local authority or its appointed agent for carrying out the work.

The Contractor may be required to carry out work on water mains or water points. In this case payment will be made at unit rates or on Dayworks as agreed by the Employer's Agent

Item	Unit
B12.06 Occupational Health and Safety Services for the duration of the contract	
(a) Direct payment to client OHS agent.....	(Prov Sum)
(b) Handling costs and profit in respect of B 12.06 (a)	percentage (%)

The tendered percentage is a percentage of the amount actually spent under Item B 12.06 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying the OHS Agent for carrying out the work. The OHS agent will be provided by the Employer.

Item	Unit
B12.07 Environmental Control Monitoring (ECO) services for the duration of the contract	
(c) Direct payment to client ECO agent.....	(Prov Sum)
(d) Handling costs and profit in respect of B 12.07 (a)	percentage (%)

The tendered percentage is a percentage of the amount actually spent under Item B 12.07 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying the ECO Agent for carrying out the work. The ECO agent will be provided by the Employer.

Item	Unit
B12.08 Provision of accredited training	
(a) Wages and salaries of local labourers employed by the Contractor in respect of training periods for onsite training by the Contractor during which no productive work is executed	Prov sum
(c) Handling costs and profit in respect of B1208 (a)	percentage (%)
(b) Accredited and approved training courses for selected local labourers including wages during training.....	prime cost (PC) sum
(c) Handling costs and profit in respect of item B12.08 (c).....	percentage (%)

Payment of the Prov sum tendered for sub items B12.08 (a) shall include full compensation for the wages and salaries of local labourers for the periods during which they attend courses and receive training that are arranged and paid for by the Contractor in terms of the Contractor's training schedule and are thus not available for the execution of productive work.

The Prov sum tendered for sub item B12.08(a) will be paid monthly in equal instalments.

Payment for the Prov sum provided in sub item B12.08(c) to cover the costs incurred for the attendance by selected and approved local labourers in the employ of the Contractor and Selected Sub Contractors of approved training courses presented by accredited institutions. The payment shall cover the applicable course fees as agreed to by the Engineer as well as wages and transport costs expended by the Contractor or Selected Sub Contractor related to the approved training courses.

The tendered percentage tendered for sub item B12.07(b) and (d) are the percentages of the amounts actually expended under sub items B12.07(a) and (c) that will be paid to the Contractor in full compensation for the Contractor's handling costs and profit in respect of the sub items.

No additional payment will be made for any of the extra costs which will be incurred as a result of the additional supervision required for managing labour and for providing informal training to the workers. The Contractor shall make suitable allowance for these costs in his tendered rates for the various items of work. Additional allowance must also be made for the involvement of senior staff members, directors and managers in training and guidance of emerging Contractors and attendance at meetings and discussions in respect of all training matters.

Except as specifically provided for in the relevant pay items included in the Bill / Schedule of Quantities no additional payment will be made to the Contractor in respect of the execution of the prescribed and approved training programme. Full compensation for the costs of training not covered by the above pay items shall be deemed to be included in the rates tendered for the Contractor's general obligations.

Item	Unit
B12.09 Trainee Technicians	
(e) Payment to Trainee Technician(s)	(Prov Sum)
(f) Handling costs and profit in respect of B 12.09 (a)	percentage (%)

The tendered percentage is a percentage of the amount actually spent under Item B 12.09 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying the Trainee Technicians. Trainee technicians to be provided by the employer.

Item	Unit
B12.10 Design, supply and installation of complete street lighting	
(g) Direct payment to the design service provider and supplier for materials.....	(Prov Sum)
(h) Handling costs and profit in respect of B 12.10 (a)	percentage (%)

The tendered percentage is a percentage of the amount actually spent under Item B 12.10 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying the local authority or its appointed agent for carrying out the work.

SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS**B1302 GENERAL REQUIREMENTS****(a) Camps, construction plant and testing facilities**

Add the following after the first paragraph:

"No specific land has been made available for the camp and offices and the Contractor shall make his own arrangements concerning a suitable site and location, as well as the provision of water, electricity and other services for the campsite. Where necessary the Contractor shall make his own arrangements with land-owners.

The Contractor shall not erect any housing or other accommodation facilities on the site of the Works and shall make all the necessary arrangements for accommodation of his personnel and site staff off the site of the Works.

No direct payment will be made for the provision of water, electrical and other services and the cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

The Contractor is responsible for obtaining the water extraction permit.

The Contractor shall provide adequate security and strict control of access to the campsite on a 24-hour basis including weekends and public holidays. The campsite area shall be adequately fenced with security fencing and security lights placed at strategic points. Notices to indicate that unauthorised persons may not enter the campsite area shall be erected at prominent locations as required by the Occupational Health and Safety requirements, or agreed with the Employer's Agent's Representative."

c) Legal and Contractual Requirements and responsibilities to the public

Add the following:

"Legislation imposes mutual obligations on the Employer and contractor in the performance of their duties to society and to the built and natural environment. To assist the contractor in understanding and assessing his obligations, and thus to make allowances for the cost of compliance with this legislation, the following additional specifications are included in the project specifications.

Section C of the Scope of Works contains the Occupational Health and Safety Specification (OHSS) for this project. Its provisions regulate the contractor's construction methods to ensure responsible conduct relevant to the project. The OHSS is a performance specification to ensure that the Employer and any bodies that enter into formal agreements with the Employer, i.e. Employer's Agents and Contractors, achieve an acceptable level of OHS performance. The Client has a zero tolerance to non-compliance and the endangering of the lives of workers, and the public, thereby being placed at risk.

Section D of the Scope of Works contains the Awareness Education Specification. This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through different strategies.

Section E of the Scope of Works contains the Labour Specification that must be complied with. The specification sets out the

requirements relating to the employment of local labour by involving the community through the established structures as well as the training requirements for these labourers.

Section F of the Scope of Works contains the Environmental Management Plan Implementation (EMPI) Specification for this project. Its provisions regulate the contractor's construction methods to ensure responsible conduct and treatment of the environment relevant to the project.

The Contractor shall assume responsibility for compliance with the Environmental Management Programme (EMPR) and all other relevant environmental Acts and regulations in respect of the sites and shall ensure that the sites are rehabilitated before the conclusion of the Contract."

- (a) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant environmental documentation relevant to this project, namely:
 - i. NEMA Authorisations for the project;
 - ii. MPRDA authorisations for the project;
 - iii. DAFF permits for the project;
 - iv. DWS authorisations for the project; and
 - v. DEDEAT approved EMPr.
- (b) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant environmental legislative provisions of the relevant Acts as listed in Section F of the Contract Document;
- (c) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the various environmental Acts and regulations will be fully complied with;
- (d) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations, and expressly absolves the Employer from itself being obliged to comply with any of the aforesaid duties, obligations, and prohibitions; with the exception of such duties, obligations and prohibitions expressly assigned to the Employer in terms of the Act and its associated Regulations.
- (e) The Contractor agrees that any duly authorised official of the Employer shall be entitled (although not obliged) to take such steps as may be necessary to ensure that the Contractor has complied with his undertakings as set out more fully in paragraphs (a) and (b) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or to inspect any appropriate records or Environmental Method Statements held by the Contractor;
- (f) The Contractor shall be obliged to report forthwith to the Employer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

Section G of the Scope of Works contains the Development of SMME Contractors. This specification contains requirements applicable to the Contractor for development of SMME Contractors. It covers all phases of construction relating to SMME Contractors and makes provision for the appointment of a full time SMME construction manager.

Section H of the Scope of Works contains the Quality Assurance Framework for Road Works. This specification contains requirements applicable to the Contractor in terms of implementing and maintaining a Quality Policy for the contract.

Add the following sub-clause:

d) Monthly reporting

When submitting, any information required and interim certificates for payment, the Contractor shall use the Employer's standard forms and formats. No payment can be made before the Contractor is registered as a vendor on the Employer's system.

The Contractor shall submit payment certificates for all work rendered in the Employer's financial year within that specific year.

The Contractor shall submit and update on a monthly basis all the appendices to the site meeting minutes and a cash flow forecast for the works.

The Contractor shall complete monthly reports regarding training, empowerment, capacity building, small contractor development, labour and staff returns as required by the Employer. This information shall also be reported on monthly for all sub-contractors employed.

The above information shall form part of supporting documentation required for making interim payments in terms of the General Conditions of Contract."

B1303 PAYMENT

Amend the pay item to read as follow:

Item	Unit
-------------	-------------

B13.01 The Contractor's general obligations

(a) Time Related Obligations

(i) During Construction Period..... Month

Insert the following paragraph after the fourth paragraph:

"Should the combined total tendered for sub-items (a), (b), and (c) exceed **20%** of the tender sum (excluding VAT), the Tenderer shall state his reasons in writing for tendering in this manner. The Tenderer's attention is drawn to Form F Contractor's Establishment on Site, (Volume3, Book 1), to be completed by the Tenderer."

Delete the 17th paragraph commencing "The tendered rate per month for sub-item 13.01(c) " and replace with:

"The tendered rate per month for sub-item 13.01 (c) (i) represents full compensation for that part of the Contractor's general obligations, which are mainly a function of construction time. The tendered sum will be paid monthly, pro rata for parts of a month, from the Commencement Date (as defined in the Employer's letter of appointment or the date on which

the letter was issued should the letter not state the commencement date) until the end of the period for completion of the works, plus any extension thereof as provided in clause 5.12 of the general conditions of contract, provided that “

SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE

B1402 OFFICES AND LABORATORIES**(a) General**

Add the following:

"It is a requirement of the contract that the offices for the Employer's Agent's supervisory staff shall be supplied with approved burglar proofing, the cost of which shall be taken as included in the relevant tendered rates for the provision of the specified building. In addition, the offices and any living accommodation are to be separated by at least 200m. Preliminary details are shown on the drawings but the final details shall be to the approval of the Employer's Agent in consultation with the Contractor".

(b) Offices

Delete the first sentence of the first paragraph and add the following:

"The office requirements for the Employer's Agent's Representative are as follows:

- (i) One office for the Employer's Agent's Representative.
- (ii) One office for the Assistant Employer's Agent's Representative.
- (iii) One office for the technical staff.

The office size and other requirements are specified elsewhere in this sub-clause."

Add the following to sub-clause (xv):

"Each office as well as the conference room shall be provided with a white board, minimum size 1,3m², which shall be fastened securely to the wall."

Add the following sub-sub-clauses:

- "(xix) Provision of floodlights, which are to be controlled by a photocell for security purposes at the offices and laboratory of the supervisory staff.
- (xx) Provision of approved photocopier capable of making A4 and A3 copies, as well as paper and toner for making up to 1000 copies per month.

All equipment shall revert back to the Contractor on completion of the Contract, except where the client has paid full invoice price.

Add the following:

"Specifications for Offices

"The Employer's Agent's Representative's office, which shall serve as a backup conference room and shall have a floor area

of fifty (50) square metres. The one Assistant Employer's Agent's Representative's office shall each have a floor area of twenty (20) square metres while the remaining one office shall each have a floor area of fifteen (15) square metres.

Each office shall be furnished with the following items:

The Employer's Agent's Representative's Office shall be provided with the following:

- (i) An office desk with a surface area of at least 1,5 m² with six drawers, two of which can be locked.
- (ii) One steel general purpose cabinet with a shelf area of at least 1,5 m². The cabinet shall be lockable with two keys.
- (iii) One steel filing cabinet with four drawers, a lock with two keys. The cabinet shall be 1 300 mm high, 480 mm wide and 800 mm from front to back.
- (iv) One drawing table with a smooth top of at least 2 400 mm x 900 mm, and the upper surface shall be 950 mm above floor level.
- (v) One book shelf units with at least three shelves each, capable of holding lever arch files. Units to be at least 900 mm wide x 900 mm high.
- (vi) Three sturdy and comfortable chairs (No plastic garden chairs).
- (viii) One conference table (approximately 3,2 m x 1,3 m) and 10 chairs.

The Assistant Employer's Agent's Representatives offices shall be provided with the following:

- (i) An office desk with a surface area of at least 1,5 m² with six drawers, two of which can be locked.
- (ii) One steel general purpose cabinet with a shelf area of at least 1,5 m². The cabinet shall be lockable with two keys.
- (iii) One steel filing cabinet with four drawers, a lock with two keys. The cabinet shall be 1 300 mm high, 480 mm wide and 800 mm from back to front.
- (iv) One drawing table with a smooth top of at least 2 400 mm x 900 mm, and the upper surface shall be 950 mm above floor level.
- (v) One book shelf units with at least three shelves each, capable of holding lever arch files. Units to be at least 900 mm wide x 900 mm high.
- (vi) Two sturdy and comfortable chairs (No plastic garden chairs).

The remaining office shall be provided with the following:

- (i) An office desk with a surface area of at least 1,5 m² with six drawers, two of which can be locked.
- (ii) One steel general purpose cabinet with shelf area of at least 1,5 m². The cabinet shall be lockable with two keys.
- (iii) One steel filing cabinet with four drawers, a lock with two keys. The cabinet shall be 1 300 mm high, 480 m wide and 800 mm from front to back.
- (iv) One drawing table with a smooth top of at least 1 200 mm x 900 mm, and the upper surface shall be 950 mm above floor level.
- (v) One book shelf units with at least three shelves each, capable of holding lever arch files. Units to be at least 900 mm wide x 900 mm high.
- (vi) Two sturdy and comfortable chairs (No plastic garden chairs).

The offices shall be air-conditioned in the summer and heating shall be provided in the winter months. Six carports shall be provided close to the offices."

(g) Ablution units

Add the following:

"A dedicated ablution unit with a minimum floor area of 10 m² for the sole use of the Employer's Agent's supervisory staff shall be provided. The unit shall contain at least the following:

- (i) One flush toilet and one urinal complete with running water and sewer pipes.
- (ii) One hand wash basin complete with hot and cold running water.
- (iii) Mirrors, toilet roll holder, paper towels, soap etc."

Add the following new Sub-clauses:

(i) Assistance to the Employer's Agent

The Contractor shall provide for the exclusive use of the Employer's Agent up to two (2) semi-skilled workmen trained or capable of being trained as survey hands, office messengers and laboratory hands. These workmen shall be available for the full Contract period as requested by the Employer's Agent.

All these labourers shall be available to the Employer's Agent and his staff throughout the duration of the Contract and in addition, should it be required by the Employer's Agent, a further period of time not exceeding one month, extending from the time of issue of the Certificate of Completion, at no additional cost to the Employer.

(j) Emergency power supply

The Contractor will be required to provide emergency power supply to the Employer's Agent's offices, laboratories and kitchen. For that purpose, a 35 kVA, 3-phase diesel-driven generator with a 48-hour fuel capacity will be required. The emergency power supply must have an automatic switch-over between the regular power and the emergency power supply."

(k) Kitchen

The kitchen shall have:

- (i) a concrete floor space of at least eight square metres in area.
- (ii) a clear height from floor to ceiling of at least 2.4 metre.
- (iii) windows of at least one square metre in total area of which zero comma seven five square metres can be opened to admit air.
- (iv) one door complete with lock and two keys
- (v) one fixed stainless steel kitchen sink with draining board and cold water tap connected to a potable water supply system.
- (vi) one kettle.
- (vii) one kitchen table and two kitchen chairs."

B1403 HOUSING

The housing for the Employer's Agent's staff shall be rented accommodation to the approval of the Employer's Agent, provided in Mthatha area as agreed by the Employer's Agent.

(c) Rented accommodation

Replace the full stop at the end of the first sentence of Sub-clause (ii) of this Sub-clause with a comma and add "and for all services connected with such accommodation."

Add the following sub-sub-clause:

"(iv) Travelling expenses for the Employer's Agent's site staff have been provided for in the provisional sum in the schedule of quantities. This amount will also include travelling expenses incurred by the Employer's Agent's personnel visiting the site for inspection, quality and acceptance control purposes."

B1404 SERVICES**(b) Water, electricity and gas**

Add the following:

"A suitable voltage regulator shall regulate the power supply in order to maintain a constant current and voltage level at all times to prevent damage to the office and laboratory equipment and related machinery during power surges. Payment for the voltage regulator shall be deemed to be included in the rates tendered for the supply of services under items 14.08 a & b. In the event of damage to the office and laboratory equipment and related machinery because of a faulty voltage regulator, the Contractor shall be liable for payment or all repair or replacement costs of such damaged items."

(d) Cooking Facilities

Add the following:

A cooking unit shall consist of a hut at least 12 m² in size and at least 2 m² of window area, all of which can be opened. The hut shall be of the same construction as specified for the ablution unit. It shall be provided with an electric or gas stove, a double kitchen sink and at least 3,0 m² of concrete working slab, and 1,5 m² of shelving. All the necessary taps, drains, sewerage and hot and cold water supply shall be provided.

B1406 MEASUREMENT AND PAYMENT

Item	Unit
B14.03 Office and laboratory fittings installations and equipment	

(a) Items measured by number:

Amend sub items to read as follow:

(xix) Rain gauge number (No)

(b) Provisional Sum items and items paid for in a lump sum:

Payment of B14.03(b)(ix) shall include for the cost of all cellular calls in connection with contract administration, as well as pro rata fixed costs.

The tendered percentage for pay item B14.03(b)(x) shall be a percentage of the amount actually spent under sub item B14.03(b)(i) which shall include full compensation for the profit and handling costs incurred in managing provision of the cellular phones and monthly billings."

(c) Items measured by area:

Amend subitem (viii) to read:

"(viii) Softboard notice board square metre (m²)"

Add the following subitem:

"(ix) White boardssquare meter (m²)"

Add the following payitems:

"Item	Unit
-------	------

B14.11 Provision of semi-skilled labour for use by the Employer's Agent

- | | | |
|-----|---|----------------|
| (a) | Wages, salaries and allowances..... | Prov Sum |
| (b) | Handling costs and profit in respect of sub-item B14.11(a)..... | percentage (%) |

Expenditure under this item will be in accordance with the general conditions of contract. Payment under Item B14.11 shall be made monthly. The amount due to the Contractor will be equal to the total of the actual amount paid to the Employer's Agent's semi-skilled labourers plus the direct cost of medical and pension benefits, Workmen's Compensation, sick leave and holiday pay, incurred by the Contractor in respect of the Employer's Agent's semi-skilled labourers. The Contractor shall advise the Employer's Agent of the full monthly cost for each semi-skilled labourer engaged. No payment other than that provided above will be made in respect of the employment of semi-skilled labourers for the Employer's Agent. Contract price adjustment will not apply to this item.

The tendered percentage is a percentage of the amount actually spent under Item B14.11 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying the Employer's Agent's assistants.

Item	Unit
------	------

B14.12 Provision of Computers

- | | | |
|-----|---|----------|
| (a) | Computers, printers, related hardware, software and consumables | Prov Sum |
|-----|---|----------|

(b) Handling costs and profit in respect of sub-item B14.12 (a)..... percentage (%)

Expenditure under this item will be made in accordance with the general conditions of contract. All equipment shall revert back to the Contractor on completion of the Contract unless the client has paid the full invoice price.

Payment under Item B14.12 shall be made once the computers and other equipment has been installed to the satisfaction of the Employer's Agent, but only on submission of a receipt by the Contractor. Payment for the computers will be included in the next monthly certificate.

The tendered percentage is a percentage of the amount actually spent under Item B14.12 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying for the computers.

Item

Unit

B14.13 Site Surveyor (employer use only)

(a) Surveyor's Remuneration including two assistants Prov Sum

(b) Handling costs and profit in respect of sub-item B14.17(a) abovepercentage (%)

Expenditure under this item will be made in accordance with the general conditions of contract. Payment under Item B14.13 shall be made as directed by the Employer's Agent. Payment for the allowances will be made in the next monthly certificate.

The tendered percentage is a percentage of the amount actually spent under Item B14.13, which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying for the Employer's Agent's subsistence allowances.

SECTION 1500: ACCOMMODATION OF TRAFFIC**B1501 SCOPE**

Add the following:

“Certain parts of the work to be carried out under this section may be reserved for selected subcontractors.

It is a requirement of this specification that traffic is accommodated taking into account the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM). The latest version for use in the accommodation of traffic is volume 2, chapter 13 of the June 1999 edition. Copies of this publication are available from Government Printers –Tel: (012) 334 4507/8/9 or (012) 334 4510 Fax: (012) 323 9574.

This section also covers the provision of additional information signs for motorists and the release of any notices to the media and public.”

B1502 GENERAL REQUIREMENTS

Insert the following:

“The whole of the site will be handed over to the Contractor at the beginning of the contract. The sequence in which various parts of the site may be occupied by the Contractor for the execution of the different items of work shall be subject to the requirements of the contract documents regarding, inter alia, working hours and the number, spacing and length of the work areas which may be occupied at any particular time.

The Contractor shall programme his work taking due cognizance of restrictive conditions indicated in Clause B1204. The Contractor's tendered rates shall include full compensation for all possible additional costs which may arise from the above and no claims for extra payment as a result of this *modus operandi* will be considered. The Contractor shall in particular note that no additional compensation shall be made for work that could be considered as half-width construction.

a) Safety

Replace the full stop at the end of the first paragraph and continue with the following:

“... flow of traffic, including the prohibition of his, and his subcontractor's, construction plant from disregarding the stop/go accommodation of traffic control facilities. Failure to comply with this requirement shall be taken as a penalty event in terms of B1502(l).”

Add the following paragraphs:

“The Contractor shall be responsible for maintaining the existing road surface both within the works area and the advance warning and termination areas in a safe and trafficable condition for the duration of the contract.

The Contractor shall within 7 (seven) working days after receipt of a 3rd party claim acknowledge receipt to the claimant. The Employer's Agent shall be copied on all correspondence regarding 3rd party claims. The Contractor shall at the monthly site meeting report on the status and outcome of the

3rd party claims.

The Contractor shall be fully responsible for all the traffic accommodation on site, including for work undertaken by subcontractors, e.g. at bridges etc.

Traffic shall be accommodated as indicated on the drawings unless an alternative tender incorporating an amended method of traffic accommodation has been accepted.

The Contractor may amend the agreed traffic accommodation scheme but only with the approval of the Employer's Agent in consultation with the provincial and municipal traffic authorities.

During the non-working hours, or when construction is not taking place on a certain section of road all obstructions to the traffic shall be removed and all signs no longer applicable to the situation shall be removed to an approved safe location or effectively covered.

No equipment or vehicles shall be stored or parked on the road side during non-working hours except if protected or demarcated and only if approved by the Employer's Agent.

When requested by the Employer's Agent, the Contractor shall provide lane closures for the purpose of road inspection. This must be done in advance of the actual programmed time for the work."

(b) Providing temporary deviations:

Add the following at the end of the second paragraph of this sub-clause:

"The construction of Temporary deviations is the preferred method of construction and may be used as an alternative to Bi-directional traffic accommodation upon the approval of the Employer's Agent. Temporary deviations may be constructed for the sections of road where the cut or fill extend too far below or above the existing road which makes the implementation of the bi-directional traffic plan impracticable.

The maximum speed for the temporary deviations shall be 40 km/hour and shall comply with the TRH 17 design guidelines. No claims with regard to traffic accommodation or the design of traffic accommodation facilities shall be entertained.

f) Approval of temporary deviations

Add the following:

"If, after any temporary deviation has been constructed, any changes are considered necessary or desirable, the proposal shall be submitted to the Employer's Agent for his approval."

i) Traffic Safety Officer

Add the following to the end of the second paragraph:

"The Contractor shall submit a CV of the candidate to the Employer's Agent for approval before the candidate is appointed as the traffic safety officer. This traffic safety officer may not be the same person as the construction health and safety officer contemplated in part C of this specification. If a

Traffic Safety Officer is found to be incompetent, the Employer's Agent will instruct the Contractor to remove and replace him with a competent person. The Traffic Safety Officer will report to the Construction Health and Safety Officer. "

Insert the following as the opening phrase to sub-sub-clause (i):

"make himself available to discuss road safety and traffic accommodation matters whenever required by the Employer's Agent and shall be responsible..."

Delete sub-sub-clauses (ii) and (iii) and replace with the following:

- "(ii) Record on neat and dimensioned sketches and submit to the Employer's Agent the position and sign reference number, where applicable, of each sign, barricade, delineator, cone, amber flicker light, guardrail and permanent or temporary painted road marking feature. The position of each shall be adequately referenced to identifiable permanent features or other surveyed points on the site of the works.

These records shall also show the date and time at which the recorded traffic accommodation features are certified correct by the traffic safety officer, and shall be signed by the traffic safety officer before being submitted to the Employer's Agent.

The records shall similarly account for whatever changes are made in the field. Such changes shall record the position of flagmen and stop/go control men and their associated traffic accommodation equipment wherever they are used.

- (iii) Personally inspect the position and condition of each traffic accommodation feature on the whole site of works twice per workshift, whether daytime or nightwork, and at least twice a day/night during non-working hours, to record all irregularities discovered and the remedial action taken, and to sign off as correct and submit to the Employer's Agent such record sheets by middle of the next working shift. The above inspections must at least take place before the commencement of peak traffic periods. The traffic safety officer shall keep a duplicate book for this specific purpose. The provision of daily photographs is advisable.

The traffic safety officer shall also submit with this report the daily labour returns of flagmen, stop/go, traffic signal control personnel employed and the traffic data recorded at each traffic control point."

Add the following sub-sub-clauses:

- "(ix) The traffic safety officer shall be equipped with a cellular telephone and shall have a traffic safety vehicle and sufficient labour at his disposal 24 hours a day, including all prescribed non-working days, and shall not be utilised for other duties. He shall be directly answerable to the Contractor's site agent. The traffic safety officer shall have his own vehicle to carry out inspections and at least one assistant to accompany him full time. Furthermore, the traffic safety vehicle shall be a truck with a capacity of at least 3 tons and shall be equipped with a high visibility rear panel in accordance with the requirements of the SARTSM.

The words TRAFFIC CONTROL shall be written on a warning sign in highly legible letters, not

less than 150 mm high, and the sign shall be mounted on both the traffic safety officer's vehicle and the traffic safety vehicle at least 1,5 m above ground level. The proposed sign and letter dimensions shall be submitted to the Employer's Agent for his approval.

The vehicles shall also be equipped with an amber-coloured flashing light of the rotating parabolic reflector type with a minimum intensity of 100W. The warning light shall be switched on at all times and the sign shall be displayed when the vehicle is used on site.

The traffic safety officer shall have a direct line of communication at all times with the police and traffic officers responsible for the area within limits of the contract. The provision of the road safety vehicle, driver, sufficient labourers and the cost of the cellular telephone shall be deemed to be included in the tendered rates.

- (x) Ensure that all obstructions related to the Contractor's activities be removed at the end of each work shift where applicable as instructed by the Employer's Agent and that the roads are safe for the travelling public.
- (xi) The traffic safety officer shall, in addition to the duties listed in paragraph 1502 (i), also be responsible to arrange for the removal of stationary or broken down vehicles off the roadway in conjunction with the traffic authorities and implementing actions requested by the traffic authorities with regard to the work to be carried out and be responsible for the erection and maintenance of all traffic signs necessary for the accommodation of traffic.
- (xii) In the event of an accident the traffic officer shall record in a written report the details of the accident, record the position of all temporary road signs, barricades, delineators, flagmen and any other devices used for traffic accommodation. In addition, the report shall include a neat dimensional sketch, photographs, identifiable permanent features, and any other relevant information.
- (xiii) At least two separate traffic safety officers and teams shall be employed when construction is carried out during the day and night."

Add the following sub-clauses:

"(j) Crossing the carriageway centreline

No vehicle or item of equipment shall be allowed to cross the centreline of a single carriageway unless the traffic accommodation and signage specifically allows for this and is approved by the Employer's Agent as safe.

(k) Site personnel

The Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on or near to the travelled way. Any person found not wearing a reflective jacket under these circumstances shall be removed from the site until such time as he is in possession of and wearing a reflective jacket. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the Employer's Agent, ineffective shall be immediately replaced by the Contractor.

(l) Penalty events

Whenever the following events occur, the Contractor shall be subjected to penalty conditions expressed in the Appendix to Tender.

(i) Non-compliance with accommodation of traffic specifications

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the travelling public, accommodation of traffic, plant and personnel in accordance with these specifications or as required by statutory authorities or ordered by the Employer's Agent, shall be sufficient cause for the Employer's Agent to apply penalties as follows:

A fixed penalty of **R5 000,00 per occurrence** shall be deducted for each and every occurrence of non-compliance with any of the requirements of section 1500 of the standard specifications and section B1500 of the project specifications.

In addition, a time-related penalty of **R1 000,00 per hour** over and above the fixed penalty shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after the Employer's Agent has given an instruction to this effect. The Employer's Agent's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

(m) Liaison with relevant Authorities

Where required the Contractor shall be responsible for acquiring the services of a municipal traffic officer and traffic vehicle (equipped with a blue light) to assist in the accommodation of traffic. The traffic officer and vehicle will be required when lanes are to be closed and/or where directed by the Employer's Agent.

If the road under construction forms part of an abnormal load route the Contractor shall liaise with the relevant provincial abnormal load office that issues permits to ensure that permits are not issued when construction restrictions do not allow passage of the abnormal load.

(k) Extension of time for completion

No delays caused by the requirement that public traffic be accommodated during the construction of the works and that traffic flows be maintained as specified will be regarded a reason for an extension of time in terms of the general conditions of contract.

(o) Provision of safety equipment for the Employer's Agent

The Contractor shall provide the Employer's Agent with:

- (1) Amber rotating flashing lights for mobile use which shall be approved by the Employer's Agent.
- (2) Safety jackets (not bibs) for the Employer's Agent and visitors for moving around the site. The jackets shall be of an approved type, orange/yellow in colour and shall be in accordance with

the South African Road Signs Manual (Volume 2, Chapter 13) on Figure 13.30 (Detail 13.30.2).

(p) Access to the works

The Contractor's plant and equipment shall not stop on the trafficked carriageway except to unload or load traffic control facilities."

(q) Other requirements

The following other requirements must be adhered to for the entire contract period:

- i) The travelling public shall have the right of way on public roads and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road. The Contractor shall deal with deliberate courtesy and understanding in any discussions or disputes at all points of contact with the travelling public.
- ii) The Contractor's tendered rates for the relevant items in the schedule of quantities shall include full compensation for all possible additional costs which may arise from the above and no claims for extra payment due to inconvenience as a result of the *modus operandi* will be considered."

B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES

Replace the first sentence of the first paragraph with the following:

"The Contractor shall provide, erect and maintain the necessary traffic-control devices, road signs, channelisation devices, barricades, warning devices and road markings (hereinafter referred to as traffic-control devices) in accordance with these special provisions and as shown on the drawings and in the SARTSM and remove them when no longer required. It shall be incumbent upon the Contractor to see to it that the abovementioned traffic-control devices are present where required at all times and are functioning properly."

Replace the last sentence of the second paragraph with the following:

"Traffic-control facilities no longer required at the site of a deviation or a lane closure shall be moved for re-use. Traffic-control facilities lost or damaged by the Contractor shall be replaced at his own cost. "

Replace the third paragraph with the following:

"The type of construction, spacing and placement of traffic-control devices shall be in accordance with the SARTSM. The recommended arrangements of the traffic control devices illustrated and/or drawings issued by the Employer's Agent shall not be departed from without prior approval of the Employer's Agent. The arrangements expected to be most commonly used in the contract are given on the tender drawings.

The details shown for spacing and placement of traffic-control facilities may however, be revised at the discretion of the Employer's Agent where deemed necessary to accommodate local site geometry and traffic conditions."

a) Traffic control devices

Add the following at the end of the last paragraph:

"At each signalised traffic control point, an all-weather shelter of at least three (3) square metres capable of accommodating two operators, with a clear window, a stable door, two chairs and a portable chemical toilet that shall be regularly maintained, shall be provided at each traffic control point. Each control point shall have a 2 (two) phased signal system

mounted on 3m high steel poles complete with all electrical wiring, a floodlight system of at least 2x400W metal halide floodlights mounted onto a 9m high pole to light up the traffic control point and lighting along the road where the traffic will queue. The provision shall include for a sufficient continuous power supply to operate each traffic control point. Included in the establishment and operation of the traffic control devices shall be a communication system that allows the operators to communicate with each other.

At each traffic control point, plastic moveable barriers, fitted with STOP signs to both sides, shall be provided to prevent vehicles from utilising the closed road lanes. These barriers shall be moved to open and close the relevant lanes for road users. ***Allow for this movable barrier under payitem B15.03(i).***

At each signalised traffic control point the following personnel are required:

- 2 Operators
- 3 Flagmen
- 1 Security Guard (Nighttime)
- 1 Cleaner responsible for removal of litter (Daytime)

Records of opening and closing of closures and traffic counts shall be kept and submitted daily to the traffic safety officer.

The Contractor shall be responsible for the removal of all litter at the traffic control points on a daily basis to an approved dumping site."

b) Road signs and barricades

Add the following:

"The Contractor shall be responsible for the protection and maintenance of all signs, and shall at his own cost replace any that have been damaged, lost, or stolen.

All temporary road signs required to remain in position for some time shall be pole mounted as shown on the drawings. All temporary road signs required to be moved more often shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted method of ballasting the sign supports shall consist of durable sandbags filled with sand of adequate mass to

prevent signs from being blown over by wind. The cost of the sandbags shall be included in the tendered rates for the various types of temporary road signs.

Temporary road signs and channelization devices shall be manufactured in accordance with the South African Road Traffic Signs Manual (Volume 2, Chapter 13) of June 1999 and arranged along the road as shown on the drawings and in the Manual.

The covering of permanent road signs, if applicable, shall be by utilizing a suitable and durable covering that shall be pulled over the sign in the form of a hood and fastened to the signposts. Plastic bags or other materials and fastened by means of adhesive tape shall not be permitted. The cost of covering of permanent road signs shall be included in the tendered rates of items B15.01 and B15.10.

All road signs shall be new or approved by the Employer's Agent as new in accordance with the specifications. The Contractor shall have available on site sufficient extra road signs, barricades, delineators, channellisation devices and traffic cones to replace items that have become defective or missing.

No work may proceed on any section where accommodation of traffic is required until such time as the relevant requirements with regard to sign posting and other detail shown on the Contractor's drawings are met and approved by the Traffic Safety Officer in writing."

c) Channelisation devices and barricades

Add the following:

"The use of drums as channelisation devices shall not be permitted. Drums may however be used to set up barriers as provided for in sub-clause 1503(d).

The start of barricades shall be positioned such that a minimum sight distance of 150m, measured at a height of 1,05m from the road surface, is obtained.

Delineators shall:

- (i) comply with the manufacturing and reflective requirements of the SARTSM and the blades shall be reversible with dimensions as indicated on the drawings;
- (ii) have smooth and round edges and be mounted on a post and base. All components shall be of durable plastic material;
- (iii) have the lower edge of the reflective part of the delineator mounted not lower than 250mm above the road surface;
- (iv) be capable of withstanding the movement of passing vehicles and gusting winds up to 80km/h in typical working conditions without falling over. To achieve this, the base shall be at least 0,18m² and ballasted by its own weight or with sandbags filled with sand;
- (v) together with its mounting be designed such that it will collapse in a safe manner under traffic impact.

Traffic cones manufactured in a fluorescent red-orange or red plastic material may be used only at short term lane deviations during daylight. Cones shall not be used on their own, but shall be interspersed with delineators at a ratio not exceeding 3:1. Cones used on all deviations shall be 750mm high. Lane closures which continue into the night time shall be demarcated by delineators only.

On section of road where the centreline has been obliterated, delineators shall be provided on both road edges at minimum 200m spacing on straight sections and at least 3 (three) visible on all curves.

Where work is not taking place in a section closed half width to traffic, the delineators shall be moved laterally back to the edge of the work area to provide a wider space for traffic."

d) Barriers

Add the following:

"Barriers for preventing vehicles from leaving the permitted lanes shall be movable barriers with an approved safety shape design (e.g. New Jersey, F-shape or single slope). Temporary movable barriers shall be obtained from suppliers and placed between the existing road and the construction areas. They shall comply with the requirements of either of the following specifications:

- (i) The European Specification EN 1317 with containment level H1, or
- (ii) The American Federal Highways Administration Specification NCHRP Report 350 with containment level TL4.

When applying these specifications, the Contractor must take cognisance of his liabilities relating to the installation of temporary works to provide protection to the permanent Works and safety to his personnel and select a barrier system appropriate to his chosen work methodology. Particularly pertinent is the working width rating of a barrier system; the displacement width of the system shall not exceed the available safe width to the nearest edge of the construction. All moveable barriers shall be installed in accordance with the manufacturer's instructions or generally accepted best practice and shall be submitted to the Employer's Agent for review and comment.

Where instructed by the Employer's Agent, the terminal sections of moveable barriers may be a proprietary type or may be contractor designed to attenuate head-on impacts of at least NCHRP Test Level 1 (50 km/h, 2 000 kg) or EN1317 Containment Level H1 (80 km/h, 1 500 kg).

Barriers are to be used when there is a vertical face greater than 1m within 2m from the traveled roadway."

e) Warning devices

Add the following:

"At night the warning lights shall be placed at strategic places such as barricades, obstructions, etc. The warning lights shall be "Britax" flashing amber lights of at least 65 watts power or a similar approved type. It may be necessary to construct a special unit to house the flashing light and 12 V power sources in such a manner than it is vandal and theft proof and the height of the lights shall be

between 1 m and 1,5 m above the ground. Torch- like flashing lights are not considered adequate. Warning boards as specified shall be mounted on all vehicles and plants.

All construction vehicles and plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. All vehicles and plant before being allowed onto the site shall obtain a clearance permit from the Employer's Agent.

(i) Vehicle mounted flashing lights

Rotating lights shall have an amber lens of minimum height of 200mm and shall be mounted in such a way as to be highly visible from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted sections of a public road, but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, and as the vehicles accelerate to the general speed when entering the road from a construction area. Lights on plant shall operate continuously while the plant is working alongside sections of road open to public traffic within the work areas.

All LDV's and cars operating on site shall also be equipped with rotating amber flashing lights which shall be placed so as to be highly visible from all directions and operated continuously while the vehicles are manoeuvring in or out of traffic or are travelling or parked alongside roads open to public traffic within the work areas.

Rotating lights and the "construction vehicle" signs on the Contractor's vehicles and plant shall not be paid for separately but shall be included in the rates covering the use of the vehicles. Those for the Employer's Agent's staff will be paid for under item B15.15.

The Contractor shall apply and maintain lights together with temporary mounting brackets, to the approval of the Employer's Agent. Vehicles and plant that do not comply with these requirements shall be removed from the site.

(ii) Sign mounted flashing lights

Two amber flashing lights shall be vertically mounted on top of the traffic signs at each end of each traffic accommodation section as shown on the drawings. The lights shall be operated during the hours of darkness.

(iii) Flashing Illuminated Arrow Board

The arrow board shall be made up of light sources mounted on a backing board. A single shaft arrow will be required that can be used for both left and right directions. The light sources must be of LED type to improve visibility if used also during day time. The arrow board shall be used at lane drops as described B1502.Road Markings

Add the following new paragraphs:

"Temporary road marking shall be reinstated before the road is opened to full width traffic.

Temporary road marking shall consist of heavy pre-marking, and/or retro-reflective road marking paint, and/or temporary road studs, as directed by the Employer's Agent.

Temporary road studs shall be installed at double the spacing and shall be fixed to the road surface with the bitumen rubber crack sealant to allow for easy removal by application of gentle heat.

Temporary road marking lines for demarcation of temporary traffic lanes, on the final road surface shall not be allowed, except if approved by the Employer's Agent. Should temporary road marking lines be approved, it shall consist of one of the following as directed by the Employer's Agent:

- (i) Construction grade tape for temporary road marking which can be removed by applying gentle heat. The tape shall be foil backed, adhesive, reflective tape. The tape shall be capable of being easily removed from the road surface by the application of gentle heat.
- (ii) Removable road marking paint."

Add the following sub-clauses:

"g) Other traffic control measures ordered by the Employer's Agent

The Employer's Agent may instruct the Contractor to provide any other road sign, reflective tape, etc. not measured in standard payitems. Such road signs shall conform to the requirements of the SARTSM, or specification provided by the Employer's Agent. Similarly, in order to ensure that the travelling public is kept fully informed and warned on matters relating to the accommodation of traffic, construction sign posting and the effect of the construction on the free flow of traffic through the site, the Employer's Agent may arrange for advertising in the press and/or for other forms of publicity.

h) Flagmen

Flagmen shall be provided where shown on the drawings or required by the specification. During the daytime, at least two flagmen shall be provided at each traffic control point in addition to the STOP/GO sign operator, one flagman at the first speed reduction sign and a second roving flagman at least a 100m behind the last vehicle in the queue to indicate to the traffic to stop.

At night time all flagmen shall be equipped with a suitably visible strobe, and a torch at each traffic control point as well as the traffic light operator. Where the shoulder of the road is closed to traffic, flagmen shall be provided at the leading ends of closures during daytime. These flagmen shall be provided at the first speed reduction sign to warn the traffic about the closure. No flagmen shall be on duty for a period of more than 10 hours per day. The traffic control site shall be well lighted at night with at least one floodlight positioned so as to illuminate the area and not shine into the oncoming traffic.

Flagmen shall be adequately trained in the standard flagging techniques as described in the SARTSM (refer to figure 13.23 of detail 13.23.1) and be provided with conspicuous clothing such as safety jackets utilizing retro-reflective and/or fluorescent panels in red, yellow and/or white.

Flagmen shall have in their possession, at all times, certification that they have attended and passed an accredited course in flagging techniques before being allowed onto the construction site.

Flags shall be made from bright red or red-orange material and shall be square with a minimum side length of 600mm. The flag shall be attached to a staff at least 1,0m in length.

In terms of lateral clearance and safety, flagmen shall stand on the shoulder of the lane of traffic that is being controlled and under no circumstances shall flagmen be permitted to stand within the traffic lane. In order to obtain maximum visual impact for the travelling public, flagmen shall stand-alone.

(i) Cleanliness of traffic-control facilities

All delineators and traffic signs shall at all times be maintained in a clean and visible condition. Any bitumen or other material on delineators or traffic signs shall be removed by the Contractor, or they shall be replaced with new ones at his own cost.

B1504 WIDTH AND LENGTH OF TEMPORARY DEVIATIONS

Replace "10m" and "5m" in the first paragraph with "7.2m" and "3.5m" respectively. Replace the second paragraph with the following:

"Where the existing road is constructed in half widths or in full width with single direction traffic, the roadway width for accommodating one-way traffic shall be at least 3,2 m wide. The length of the half-width construction or full width construction with single direction traffic controlled by STOP and GO/RV signs shall not exceed 1km.

The traffic shall be single direction controlled by STOP and GO/RV signs during daytime and temporary traffic signals at night as agreed by the Employer's Agent."

B1506 EARTHWORKS FOR TEMPORARY DEVIATIONS

Add the following:

"Wherever possible and as agreed by the Employer's Agent topsoil shall be stripped off the area required for deviations. The topsoil shall be stockpiled in accordance with the specifications for later re-use to re-instate the deviations. Payment for the stockpiling and re use of topsoil will be made under Section 5800."

B1507 GRAVELING OF TEMPORARY DEVIATIONS OR OF EXISTING ROADS USED AS TEMPORARY DEVIATIONS

Replace the last portion of first sentence of the first paragraph starting with " , shall" with the following:

"be provided with suitable layer works with material as approved by the Engineer."

Replace the second paragraph starting with the following:

"The contractor shall provide, spread, water, mix, stabilize and compact such material to a density as per the approved pavement design as submitted to the Employer's Agent."

B1510 EXISTING ROADS USED AS DIVERSIONS

Add the following:

"The Contractor shall indemnify the Employer against all proceedings, claims, actions, damages and costs which may arise from or be related to damage to vehicles or property or injury to persons as a result of loose stones or aggregates on the road surface or as a result of bituminous applications during the construction of the works.

The Contractor shall arrange his activities so that construction traffic and equipment do not unnecessarily obstruct public traffic or force it to a complete standstill. The flow of public traffic shall always take precedence and the Contractor shall not stop or delay public traffic to make way for construction traffic."

B1511 MEASUREMENT AND PAYMENT

Insert the following paragraph after the heading:

"The Contractor's tendered rates for the relevant items in the schedule of quantities shall include full compensation for all possible additional costs which may arise from the above and no claims for extra payment due to inconvenience as a result of the modus operandi will be considered."

Item	Unit
"B15.01 Accommodating traffic and maintaining temporary deviations	kilometre (km)

Replace the first paragraph with the following:

"The unit of measurement shall be the kilometre, measured along the centre lines of the road, the ramps from the noses and the cross roads where construction work is carried out. Accommodation of traffic shall be measured once only, that is no separate payments shall be made for lane and shoulder rehabilitation, slurry, reseal, asphalt overlay, side drains, etc. Only the net distance of the road shall be measured and overlapping distances during staged construction shall not be measured. A distinction shall be made between accommodation of traffic on the through road and accommodation of traffic on the cross roads.

In the second paragraph, replace the comma after "deviations" at the start of the third line with a full stop and delete the remainder of this first sentence. Also delete the whole of the second sentence, which refers to compensation for the traffic safety officer. The provision of a fulltime traffic safety officer and all the duties performed by him shall be paid for under Item B15.14

In the third paragraph second sentence, insert a full stop after "use" and delete the remainder of the sentence."

Item	Unit
B15.02 Earthworks for temporary deviations	

(a) Shaping of temporary deviations

Add the following sub-sub item to this sub item:

"(i) Temporary deviations (new construction) kilometre (km)"

Item	Unit
-------------	-------------

B15.03 Temporary traffic control facilities

- | | |
|--|----------|
| (a) Flagmen (Including Equipment) | |
| (i) Flagmen..... | man-days |
| (ii) Additional flagmen as directed by the Employer's Agent..... | man-days |

Replace the 1st paragraph of the payment description to the following:

"The unit of measurement shall be a full day and night worked by flagmen. A man-day shall be deemed to comprise of a number of shifts within a twenty-four-hour period. Shifts of 12 hours and less shall be measured as half of a man-day."

In the pay Clause amend "a flagman who is" to read "flagmen who are" and at the end delete the full stop and add the following:

", Stromberg Lightman xenon strobes and torches." (b), (c), (d), (e), (f) and (h). *Delete the second paragraph and replace with the following:*

"The tendered rates shall include full compensation for the provision, erection and eventual removal of the signs. The rates shall also include for the moving or covering of the signs as required throughout the Contract."

Amend sub-item (h) to read as follows:

- | | |
|---|-------------|
| (h) Delineators (TW 401 and TW402) | |
| (i) Double sided blade (size indicated) | number (No) |

Amend the following notes in the measurement paragraphs as follows:

"The tendered rate for sub item (h) shall also include full compensation for the sign stand, for the provision of two sandbags per delineator to hold it in position and for their replacement when necessary due to whatever reason. Only the standard plastic type road sign TW 401/402 (Old DTG 50 J) will be allowed on this Contract."

Add the following at the end of the last paragraph of the payment description:

"However, allowance has been made in sub-item (h) Delineators for double the quantity of delineators required to execute the works. Payment under this item will be made up to the maximum quantity scheduled."

Item	Unit
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B15.04 Relocation of traffic-control facilitieslump sum

Add the following:

"Item B15.04 is only applicable to those items ordered by the Employer's Agent and for which the cost of relocation is not already included in item 15.03 (or B15.03).

The lump sum tendered will be payable monthly in instalments in relation to the value of work done (excluding the value of any price adjustments in terms of clause 6.8 of the General Conditions of Contract)."

Item	Unit
-------------	-------------

B15.05 Graveling and repair of temporary deviations and existing gravel shoulders

Amend item pay item "a) Temporary deviations" to read as a sub-item:

Include the following pay items:

- | | |
|---|-------|
| i) Scarify / Rip and re-compact 150 mm of G10 equivalent material to 90% mod AASHTO | m^3 |
| ii) 150 mm G9 compacted to 93% mod AASHTO | m^3 |
| iii) 125 mm G7 compacted to 95% mod AASHTO | m^3 |

Items B15.05 i) to iii) shall comply to the requirements as per section 3400 of the specifications.

Item	Unit
-------------	-------------

B15.14 Traffic safety officermonth

The unit of measurement shall be the period in months that the approved traffic safety officer is employed.

The tendered rate per month shall include full compensation for the cost of the traffic safety officer to conduct his duties as specified in Sub-clauses B1502 (i) and the Health and Safety specifications.

Item	Unit
-------------	-------------

B15.15 Provision of traffic safety equipment for use by the Employer's Agent

- | | |
|---|---------------------|
| (a) Amber Rotating lights, safety jackets, magnetic signs and sign boards | prime cost (PC) sum |
| (b) Handling cost and profit in respect of sub-item B15.15(a) | percentage (%) |

The prime cost items shall be paid for in accordance with the provisions of the General Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the relevant prime-cost item, which shall include full

compensation for the handling costs of the Contractor, and the profit in connection with providing the specified services. All to comply with SARTSM.

Item	Unit
-------------	-------------

B15.16 Penalties

- | | |
|--|----------|
| (a) Fixed Penalty per occurrence | No |
| (b) Time related occurrence | per hour |

The initial quantity applicable for penalties shall be 0 and shall be increased as specified.

Add the following new sections:

B1517 BLASTING OPERATIONS

When blasting, operations are to be carried out in such close proximity to roads being used by the public that it will be necessary to stop the public traffic for safety reasons the following procedure shall apply:

- (a) The Contractor shall keep the Employer's Agent fully informed of his intentions and procedures. The Employer's Agent reserves the right to modify such procedures should he consider it to be in the interests of the Employer or safety of the public.
- (b) Blasting shall be carried out only once a day around midday and on the same day(s) of the week (eg. Wednesdays) so that the travelling public will become accustomed to certain days being blasting days and can arrange their trips accordingly. Blasting shall be restricted to four days in the week.
- (c) The stoppage to the public traffic shall be minimised and limited to a maximum of four hours per blast.

In the event of the blast causing a partial or even complete blockage of the public road and the clearing of this blockage not being possible within the three-hour time limit, then the Employer's Agent shall have the right to impose a penalty on the Contractor of **R10 000-00 for every hour**, or portion thereof, which the road is closed to traffic in excess of the four hour limit. In addition:

- (i) The Contractor shall be responsible for attending to, and satisfactorily resolving, all claims from members of the public as a consequence of exceeding the three-hour limit and as part of his obligations under Sub-clause 8.1 of the General Conditions of Contract.
 - (ii) The Contractor shall submit, if requested by the Employer's Agent, a written report on the reasons for the blockage and possible measures to prevent a recurrence.
- (d) All fly rock and debris shall be thoroughly removed from the public road before reopening. This shall be subject to the Employer's Agent's inspection and approval.
- (e) Notices of an approved language and format shall be erected at the positions agreed by the Employer's Agent in order to warn the traffic of delays due to blasting.

Suitable timeous notices shall also be inserted in the local newspapers and use made of local radio stations as agreed with the Employer's Agent.

- (f) All advisory signs shall be paid for under Section 5600. All other costs involved with complying with the above requirements shall be the Contractor's responsibility and he shall allow for them in his rates."

SECTION 1700: CLEARING AND GRUBBING

B1701 SCOPE

Add the following as a final paragraph:

“Clearing and grubbing for the construction of site offices shall not be measured separately and shall be deemed to be included in the rates tendered for item B13.01.”

B1702 DESCRIPTION OF WORK**c) Conservation of topsoil**

Add to the end of the 1st paragraph:

“The depth of topsoil removed shall be reliant on the terrain, suitability of material and topsoil requirements of the work. Generally, the Contractor will not be required to remove topsoil to more than an average depth of 400mm unless approved by the Employer’s Agent before commencing with topsoil removal from any particular area.”

Replace the second paragraph of this clause with the following:

“After clearing and grubbing, all topsoil shall be removed to either windrows alongside the construction area or to stockpile. Where ordered by the Employer’s Agent, any topsoil that shall be required for the topsoiling of new banks and cuts, but which cannot be accommodated within the construction site, shall be loaded and hauled to the designated stockpile area where it shall be placed in temporary stockpiles for later use in the rehabilitation of the site affected by construction activities. Where new borrow pits are to be opened up the topsoil shall first be removed (independently of the overburden) and placed in temporary stockpiles at the edge of the borrow pit. The moving of topsoil from windrow or the loading of topsoil from temporary stockpiles and the placing and spreading thereof on cut or fill slopes or on borrow pit spoil sites, is covered in Section 5800.”

B1703 EXECUTION OF WORK**(a) Areas to be cleared and grubbed**

Delete "normally" in the first line of the second paragraph of this Sub-clause.

B1704 MEASUREMENT AND PAYMENT

Amend the following payment item

Item	Unit
B17.01 Clearing and grubbing	hectare (ha)

Add the following to the measurement and payment paragraphs:

“Clearing and grubbing for the construction of camp sites shall not be measured separately. Payment shall be regarded

as included in the rates tendered for the applicable items for the above-mentioned work.”

SECTION 1900: DAYWORKS

B1901 SCOPE

This Section covers the listing of daywork items in accordance with the General Conditions of Contract clause 6.5 as amended by Particular Condition, for the use in determining payment for work which cannot be quantified in specific units in the Bill of Quantities, or work ordered by the Employer's Agent during the construction period which was not foreseen at tender stage and for which no applicable rate exists in the Bill of Quantities.

B1902 ORDERING OF DAYWORK

No daywork shall be undertaken unless written authorisation has been obtained from the Employer's Agent. Work will be classified as daywork only if the Employer's Agent considers no other rate in the Schedule of Quantities appropriate for payment purposes.

An instruction regarding all work to be carried out under daywork in terms of clause 6.5 of the General Conditions of Contract will be issued at the discretion of the Employer's Agent. Some or all of the items priced under daywork in the Schedule of Quantities may possibly not be required for this contract.

Before ordering any material, the Contractor shall submit quotations to the Employer's Agent for his approval, and shall submit such receipts or vouchers to the Employer's Agent as may be necessary for proving the amount claimed.

B1903 MEASUREMENT AND PAYMENT

Item	Unit
------	------

B19.01 Personnel

(a) Personnel during normal hours

- | | |
|--------------------------------|----------|
| (i) Unskilled labour | hour (h) |
| (ii) Semi-skilled labour | hour (h) |
| (iii) Skilled labour | hour (h) |
| (iv) Ganger | hour (h) |
| (v) Flagmen | hour (h) |

Item	Unit
------	------

B19.03 Materials

- | | |
|--|------------------------|
| (a) Procurement of materials | provisional (Prov) sum |
| (b) Contractor's handling costs, profit and all other charges
in respect of sub-item B1803(a) | percentage (%) |

SECTION 2100 : DRAINS

B2101 SCOPE

Amend the first paragraph to read:

"This section covers all work both rehabilitative and new work in connection with the excavation and construction of open drains, subsoil drainage and banks and dykes at the locations and to the sizes, shapes, grades and dimensions as shown on the drawings or as directed by the Employer's Agent, and the test flushing of subsoil drains."

B2104 SUBSOIL DRAINAGE

Delete the content of this clause and replace with the following:

Scope

Geocomposite sub soil drains shall consist of a drainage core connected to a drainage pipe, all of which shall be enclosed in a geotextile. This specification covers:

- The synthetic fibre filter fabric material (geotextiles) generally specified for use in subsoil drainage works, to perform hydraulic and mechanical roles as filter, separator and drainage material.
- The drainage core spacer and
- The perforated drainage pipe conduit.

(a) Materials**(i) Geotextile Component**

Geotextile shall consist of a synthetic polymer material manufactured in a continuous homogenous sheet (in rolls) by the following method:

- Nonwoven, mechanically bonded (continuous fibre spunbonded, needle-punched) The synthetic polymer shall be the following:
 - Geotextile – Polyester, Polypropylene
 - Geocomposite Core / Spacer – HDPE
 - Netlon pipe conduit - HDPE

(ii) Chemical and Biological Properties

The geotextile and geocomposite core / spacer shall be rot-proof and shall be resistant to bacteria, algae and fungi. The geotextile shall maintain at least 80 % of the original tensile strength after direct exposure to sunlight for 1 500 hours. The geotextile and geocomposite core / spacer shall be able to withstand the aggressiveness of the soil and groundwater with a pH in the range of 2 to 10. The geotextile and geocomposite core / spacer shall not be attractive to rodents and termites.

(iii) Classification

Geotextile shall be classified to the following minimum requirements as listed in Table 1.

MINIMUM GRADE CLASSIFICATIONS OF GEOTEXTILES

PROPERTIES	UNIT	GRADE 1	GRADE 2	GRADE 3	GRADE 4	TEST METHOD
Tensile Strength (minimum)	kN/m	10	13	18	30	3.6 of SANS 0221
Penetration load (minimum)	kN	1,5	2,5	3,6	5,0	3.5 of SANS 0221
Puncture resistance	Mm	30	25	18	10	Clause 8114

(maximum)						
Water percolation (minimum)	l/s/m ²	20	15	15	5	3.5 of SANS 0221

The mechanical index values listed in Table 1 represent MARV in the weakest principal direction. The filter- fabric used for subsoil drains shall be grade 2 or 3 and shall satisfy the criteria for this grade of geotextile.

(iv) Drainage Core Spacer Component

The drainage core shall act as a flow net and shall include the physical characteristics as listed in Table 2.

Drainage Core Spacer			
Properties	Units	Core	Test Method
<u>Polymer Type</u>		HDPE	
Mass	g/m ²	500	SANS 10221
Thickness under 2 kPa	mm	4.0	SANS 10221
Tensile Strength	kN	3.0	SANS 10221
Discharge Capacity under 50 kPa	l/s/m	0.4	EN ISO 11056

Note: Tensile strength represents MARV in the weaker principal direction

The geotextile required to enclose the drainage core shall consist of the properties as per Table 1.

(v) Perforated Pipe Component

Drainage pipe shall meet the following requirements: -

Pipes for subsoil drainage shall have an internal diameter of 100 / 150 mm. The pipe shall be manufactured from High Density Polyethylene (HDPE) with a solid 5.0mm wall thickness. It shall be extruded into an open lattice wall structure, with 70% of the diameter consisting of open area and a 30% solid area along the invert. Perforations in the open structure of the pipe shall be greater than 5 mm but less than 12mm.

Infiltration:

The water infiltration capacity of the pipe under a 200mm static head shall not be less than specified: -

- For 100 mm I.D. pipe = 55 litres per metre per second
- For 150 mm I.D. pipe = 82 litres per metre per second

(vi) Natural permeable material

The crushed stone shall be single sized coarse (20mm nominal) and shall be washed clean of all fines.

(b) Geotextile testing**(i) General**

The index tests to be carried out on geotextiles relate to the material and the method of manufacture, and are used mainly to ascertain that the correct grade of geotextile is supplied, and that the material is equivalent to that selected and specified for use in the works. The Contractor will be required, on the request of the Employer's Agent, to submit a certificate by an approved laboratory to prove compliance with the specified qualities without additional cost to the Employer. In addition, the Employer's Agent may request endurance tests to evaluate the geotextile's long-term performance when placed in conjunction with the resident soil.

Index Tests

1. Grab Strength (N):
Testing shall be carried out in accordance with Standard Test Method ASTM D4632.
2. Tensile Strength (kN/m):
Testing shall be carried out in accordance with Code of Practice SANS 10221.
3. Penetration Load – CBR (kN):
Testing shall be carried out in accordance with Code of Practice SANS 10221
4. Puncture Resistance (mm):
Testing shall be done in accordance with test procedures laid down by EN ISO 13433. The test is carried out by dropping a 45° cone through 500 mm onto the geotextile fixed in a holding device. The greater the size of the hole made, the lower the resistance of the fabric to puncturing.
5. Apparent Opening Size (AOS) (micron):
Testing shall be carried out in accordance with AFNOR 38017 for Steady State (Unidirectional) Flow Conditions.
6. Permeability (m/s):
Testing shall be carried out in accordance with Code of Practice SANS 10221.

$$\text{Permeability (m/s)} = \frac{\text{Throughflow (l/s/m}^2\text{)} \times \text{geotextile thickness (mm)}}{\text{Hydraulic gradient (i) = h/L}}$$

h = water head
L = length of sample

(ii) Performance (Endurance) Tests

Steady State Flow Conditions: Gradient Ratio (GR) Test ASTM D5101-99.

(c) Handling and placing

Unless otherwise specified, the surface area of the trench excavation shall be trimmed to provide a uniform surface prior to placing any geotextiles. The geotextiles shall not be exposed to direct sunlight for prolonged periods, and shall be

protected from mechanical damage and contamination during installation and construction. The geotextile material shall be overlapped both longitudinally and transversely. The longitudinal overlaps shall be in the direction of flow.

d) Construction of subsoil drainage systems

Proving of pipes in subsoil drainage systems

On completion of the pipe laying and prior to backfilling, all pipe joints shall be surveyed as proof of their installation to line and level. After backfilling the pipes shall be proved by pulling through a cylindrical cleaning brush followed by a wooden mandrill $\pm 400\text{mm}$ long and 5mm in diameter less than the bore of the pipe. Proving of pipes shall not be paid for separately and the cost thereof shall be deemed to be included in the rate tendered for laying the pipe."

B2106 MANHOLES, OUTLET STRUCTURES AND CLEANING EYES

Insert the following paragraph after the last paragraph:

"The end of each subsoil outlet shall be marked with a 300mm x 300mm perspex plate fixed to the top portion of the fence line opposite each subsoil outlet structure in accordance with the details on the Drawings."

B2107 MEASUREMENT AND PAYMENT

Item	Unit
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B21.01 Excavation for open drains

Add the following to the penultimate paragraph of this item:

"The tendered rate shall also include full compensation for trimming the open drains."

Item	Unit
-------------	-------------

B21.04 Impermeable backfilling to subsoil drainage systems

Add the following new sub-items:

- | | |
|---|--------------------------------|
| (a) Unstabilised natural gravel | cubic metre (m ³) |
| (b) G5 material stabilised with 4% cement as stabilising agent..... | cubic metre (m ³)" |

Amend payitem B21.06 to read as follow:

Item	Unit
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B21.06 Natural permeable material in subsoil drainage systems (washed crushed-stone):

(a) Crushed stone obtained from approved commercial sources.

(ii) 20 mm single size aggregate.....cubic metre (m³)

SECTION 2200: PREFABRICATED CULVERTS**B2201 SCOPE**

"This section also covers the replacing and/or lengthening of existing culverts, modification of and repairs to existing catch pits.

The information given on the drawings, long sections and drainage schedules may be altered to suit actual site conditions. Culverts shall only be constructed once the information on the drawings has been confirmed by the Employer's Agent. Prefabricated units shall only be ordered once actual measurements of length have been confirmed on site."

B2202 TYPES OF CULVERTS

Add the following:

For all culverts greater than 1.8m the cast in situ culvert is preferred.

B2203 MATERIALS**(b) Portal and rectangular prefabricated concrete culvert units**

Replace this sub-clause with the following:

"Precast concrete units shall comply with the requirements of the latest SANS 986:2006 specification.

Prior to the manufacture of any units the manufacturer shall submit his Quality Plan to be approved by the Employer's Agent before delivery of any units to site. As part of the Quality Plan submitted for approval copies of calibration certificates of both gauges used for proof loads and cover meters used at the factory shall be supplied to the Employer's Agent. The originals of these certificates shall at all stages also be available for inspection at the factory premises. The manufacturer shall check each precast unit for cover compliance, and random checking of units shall not be permitted. The Employer's Agent's Representative may visit the factory at any stage to ascertain adherence to the quality plan as well as to check covers before delivery to site. Any substandard cover shall result in the batch being rejected. Should the manufacturer not be adhering to their Quality Plan the Employer's Agent may exercise the right to reject the use of products from the manufacturer concerned. The Employer shall also be informed in all such cases.

For durability requirements, due to the reduced cover provided for pre-cast culverts all durability testing shall be done in accordance to Clause B6404(h) shall fall within the severe category. For units within the 5km zone from the coast the very severe category shall be used and increased cover shall be as specified by the Employer's Agent."

(d) Fine Granular Material

Add the following:

"Selected material, approved by the Employer's Agent, may be used for the bedding." **(j)**

Steel reinforcement

All steel reinforcement work shall be carried out in accordance with the requirements of Section 6300."

B2204 CONSTRUCTION METHODS

Replace the 2nd paragraph with the following:

"Culverts shall generally be lengthened according to the "embankment method". The Contractor shall at all times ensure that the existing drainage is at all times maintained and any damage caused as a result of blocked culverts during construction shall be repaired at the Contractor's expense.

New culverts shall generally be constructed according to the "trench method" unless otherwise indicated on the drawings.

The bottom of the excavation for culverts that are to be replaced or lengthened shall be inspected by the Employer's Agent prior to the placing of the bedding material. If the material is found to be suitable, it shall be ripped to a depth of 150mm below the bottom of bedding level and re-compacted to at least 93% Mod. AASHTO density.

Where the material is found to be unsuitable, it shall be removed to a depth specified by the Employer's Agent and then replaced with selected material compacted to at least 93% Mod. AASHTO density in layers not exceeding 150mm thickness."

B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD**(b) Width of excavation**

Add the following paragraph after the first paragraph:

"The width of excavation shall be as indicated on the drawings. The specifications given elsewhere in this section for backfilling the culverts shall apply mutatis mutandis to pipe culverts, inlet and outlet structures, catchpits and manholes."

B2207 UNSUITABLE FOUNDING CONDITIONS

Add the following to the first paragraph of this Clause:

"Such material shall be classed as backfill for purposes of payment."

Amend the last three lines of the second sentence of the first paragraph of this Clause to read as follows:

"... or other approved material, such as rockfill, compacted in accordance with Clause 3307."

Add the following to this Clause:

"Unsuitable material excavated by the Contractor on the Employer's Agent's instructions shall be measured under item 22.01. The backfilling of the excavated material below the bottom of the culvert shall be termed "foundation fill" as specified in Clause 6109 and shall be measured under item 61.08."

B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS**(a) Concrete pipe culverts**

In the first line of the first paragraph amend "Class A, B, C or D" to read "Class A or C".

(ii) Class C Bedding

Replace the contents of this Sub-sub-clause with the following:

"The pipes shall be laid on a bedding cushion of lightly compacted selected material in accordance with the details as shown on the drawings or as prescribed by the Employer's Agent."

(b) Portal and rectangular culverts**(i) Cast in situ floor slabs**

Add the following to this Sub-sub-clause:

"Joints of the types detailed on the drawings shall be formed in the floor slabs, and between the floor slabs and the inlet and outlet structures."

(iii) Placing the portal portions of culverts

Add the following to this Sub-sub-clause:

"The upper portion of portal and rectangular culverts shall not be placed until the in situ concrete floor slab has attained half its 28 day strength. Furthermore, on completion of backfilling, no traffic, including construction traffic, shall be permitted over the complete culvert until the in situ concrete has achieved its 28 day strength."

B2211 BACKFILLING OF PREFABRICATED CULVERTS

Amend the first line of the second paragraph of this Clause to read as follows:

"The material used for the backfilling alongside the culvert shall be selected material of at least G7 quality."

B2215 SERVICE DUCTS

Insert the following at the end of the 1st paragraph:

"(v) HDPE Sleeve Pipes

HDPE sleeve pipes shall be:

1. Corrugated cable ducts complying with the requirements of SANS IEC 61386-24: 2005 for sleeves to be laid in trenches.
2. HDPE pipes for drilling shall be manufactured from PE63 – PN4 and shall comply with the requirements of SANS 427."

Add the following at the end of the penultimate paragraph

“Before closing, all sleeves or ducts shall be proved as specified in sub-sub-clause B2104(b)(v).”

B2218 MEASUREMENT AND PAYMENT

"Item

Unit

B2219 CONSTRUCTION TOLERANCES

The installation of prefabricated pipes, portal and rectangular culverts and ducts shall comply with the requirements stated below:

(a) Level

The permissible deviation from the specified level shall be + 25 mm.

(b) Alignment and grade

The permissible deviation of the alignment and grade of each culvert and pipeline shall be + 20 mm from the specified line and level, or from the line between culvert or pipe inverts at successive headwalls, manholes or catchpits, as applicable, when measured over any 6 m length, and all such deviations shall be gradual. Reverse falls are unacceptable."

SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS**B2301 SCOPE**

Add the following to this Clause

"This section also covers the replacement of damaged concrete kerbing, channelling and lining."

B2302 MATERIALS**(b) Kerbing and channelling**

Add the following paragraph to this Sub-clause:

"Precast kerb and channel units used in curved kerbs shall have the following lengths: Kerb
radii up to and including 20 m 0,3 m
Kerb radii exceeding 20 m and straight 1,0 m"

B2304 CONSTRUCTION**(a) Excavation and preparation of bedding****(i) Kerbs and channels**

*In the first sentence of this Sub-sub-clause amend "approved bedding material at least 75 mm thick" to read
"15 MPa concrete at least 50 mm thick".*

Add the following to this Sub-sub-clause:

"If necessary due to pavement layer thicknesses some of the layer on which the bedding material is to be placed will have to be removed in order to ensure that the minimum thickness of 50 mm bedding beneath the kerbs and channels can be placed. The Contractor will be held to have allowed for the removal of this material in the rates for kerbing and channelling."

(b) Prefabricated concrete kerbing and channelling

Add the following to this Sub-clause:

"Where a line of kerb and marker meets a line of kerb with channel, the difference in top of kerb height shall be transitioned over a length of 4 m or 4 full kerb lengths. Over this length the channel shall be formed in 20 MPa cast in-situ concrete, varying uniformly from the marker to the channel."

(e) Cast in situ kerbs and channels

In the second sentence of the second paragraph of this Sub-clause delete everything after the words "shall then be finished"

and replace with "with a steel trowel to a smooth, dense, uniform finish before the concrete has hardened and without the use of additional cement. Exposed edges shall be rounded to a radius of 5 mm."

(i) Construction sequence

- (i) Where kerbs and channelling are constructed before the base.

In the last sentence of this Sub-sub-clause after the words "precautionary measures" insert ", including complete backfilling behind kerbs,"

B2307 MEASUREMENT AND PAYMENT

Item	Unit
B23.03 Concrete chutes (typical designs):	metre (m)

Add the following new sub-items:

- (b) Cast in Situ, 600m wide, using concrete class 25/19

SECTION 3300: MASS EARTHWORKS

B3302 MATERIALS**(b) Fill**

Add the following to Sub-sub-clause (i):

"At least 20% of rockfill material by mass shall pass the 4,75 mm sieve in order to obtain maximum densities."

Add the following to Sub-sub-clause (ii):

"The minimum CBR at 93% of modified AASHTO density of the material, at a depth between 0 m and 0,8 m below final road surface, shall be 7."

Replace the last paragraph of Sub-sub-clause (ii) with the following:

"The Employer's Agent may allow or order the use of material not meeting these requirements, i.e. clay or clayey material with a CBR of less than 3% at 90% modified AASHTO density, provided that such material shall be placed in the centre portion of fill so that at no place it is less than 2 m from any exposed face of the side slopes and not less than 6 m from the finished road level. The 2 m criterion may need to be increased depending on the outcome of stability analysis on the composite fill."

Add the following to the first paragraph of Sub-sub-clause (iii):

"The minimum modified AASHTO density of material, at a depth between 0,0 m and 0,8 m below final road surface, shall be 93%."

Amend Sub-sub-clause (iv) to read:

"The maximum swell at 100% modified AASHTO compaction shall be not more than 2%."

B3303 CLASSIFICATION OF CUT AND BORROW EXCAVATION

Classification of cut and borrow excavation shall be revised as follows:

"a) Classes of excavation**(ii) Intermediate excavation**

No distinction shall be made between soft and intermediate excavation, and all intermediate excavation shall be classified and measured as soft excavation."

B3305 TREATING THE ROADBED**(a) Removing unsuitable material**

Add the following to the first paragraph of this Sub-clause:

"Roadbed material within 0,8 m of the finished road level shall have a minimum CBR of 3 at 90% of modified AASHTO density. Any material which does not meet this requirement shall be treated as unsuitable, removed and replaced with suitable fill material as specified in Clause B3302.

Replace "or" in the eight line of the third paragraph with "and"

d) In situ treatment of roadbed

Add the following after the second paragraph:

"Shales and mudstone shall be treated as directed by the Employer's Agent."

B3306 CUT AND BORROW

(a) Dimensions of cuts

Add the following sub-clauses:

- "(i) In certain cuttings in soft or intermediate material the Employer's Agent may require the excavation of large trial holes prior to confirming the final cut slope. Such trial holes will be approximately 8 metres deep with sloping sides so that the excavation can safely be entered and inspected. Payment for such excavations will be on a dayworks basis.
- (ii) After excavation of all or part of the material in a cutting it may be found that the material in the slope of the cut is unstable at the batters shown on the drawings or that additional material of the type being excavated is required. In such cases the Employer's Agent shall order the batter of the cut to be flattened. An additional payitem is provided for this work.
- (iii) Side drains shall be excavated and cleared not later than completion of the subbase layer. 50% payment will be made for subbase and no payment for subsequent layerworks will be made until such time as the side drains have been completed to the satisfaction of the Employer's Agent.

Layerworks becoming wet due to the spill of material into the side drains, creating insufficient drainage shall be repaired at the Contractor's cost.

Any material below selected subgrade level that becomes loosened as a result of excavation methods chosen by the Contractor shall be shaped and compacted at the Contractor's expense and no payment for any form of roadbed preparation will be made."

(b) The use of cut material

Add the following at the end of the last paragraph of this Sub-clause:

The Contractor shall submit his detailed earthworks utilization plan to the Employer's Agent for approval before commencing with the permanent earthworks."

(d) Selection

Add the following:

"In order to minimize the quantities of material that may have to be temporarily stockpiled, the Contractor shall first prepare a sufficient number of fill sites for the placing of fill material. The number of fill sites to be prepared and their locations shall be approved by the Employer's Agent prior to the commencement of any excavation.

The choice of a particular fill or the particular zone in any fill in which the material currently being excavated shall be placed shall be at the sole discretion of the Employer's Agent whose decision in this regard shall be final. When the Employer's Agent considers that the nature of the material being excavated has changed to a sufficient degree to warrant its incorporation into another zone of a fill under construction or into another fill at a different location he shall instruct the Contractor accordingly and the Contractor shall immediately switch his hauling and compaction plant to the new fill sites or zones. No additional payment will be made for this changing of compaction sites, the costs of which will be deemed to be included in the rates.

In order to minimize any adverse consequences of this provision it is strongly recommended that the Contractor plan his day to day operations in consultation with the Employer's Agent."

e) The temporary stockpiling of materials

Replace the contents of this sub-clause with the following:

"The Contractor shall plan his activities in such a manner so that materials excavated from borrow areas and cuttings can be directly transported to and placed at the designated points.

The temporary stockpiling of material will not be paid for separately unless instructed by the Employer's Agent, and full compensation will be deemed to have been included in the rates tendered for the various payment items for work for which the stockpiled material is to be used."

g) General

Add the following after the first sentence of the second paragraph:

"The final cut surface in hard excavation shall not be more than 0,5 m below the specified slope face, measured at right angles to the strike and dip directions of the slope face."

B3307 FILLS**(a) General**

Add the following before the first paragraph:

"The construction activities pertaining to this contract involve the upgrading of an existing road or portions of an existing road where existing cut and fill slopes have already been constructed. All cut and fill activities required to achieve the new road profile shall not be considered as cut or fill widening and no such claims shall be entertained. Cut and fill widening shall only apply under the strict instruction of the Employers Agent's Representative."

Add the following at the end of the first paragraph:

"Special attention shall be given to ensuring that compaction standards are maintained right up to the edges of the fills since no uncompacted material will be allowed to remain on the fill batters. Material spilled onto the fill batters as a result of construction at higher levels shall be trimmed off the fill batters to the satisfaction of the Employer's Agent."

Add the following at the end of the second last paragraph:

"The maximum compacted layer thicknesses for the various material types shall be as follows:

- (1) Unweathered dolerite and hard sandstone 600 mm
- (2) Durable shales unless otherwise authorised by the Employer's Agent 250 mm
- (3) Fine gravels, weathered dolerites, shales and soils 150 mm"

Add the following:

"Where existing embankments are to be widened, or where new embankments are to be constructed adjacent to existing embankments, the existing side slopes shall be benched as specified in sub-clause 3307(d) and in accordance with the details on the drawings.

In addition, the material in the fill widening shall, unless otherwise instructed by the Employer's Agent, be compacted as follows:

- (i) where the thickness exceeds 1,5 m, it shall be compacted to a minimum of 93% modified AASHTO density to a depth of at least 1,5 m below the final road level; or
- (ii) where the thickness is less than 1,5 m, the in situ roadbed and fill material shall be compacted to 93% modified AASHTO density."

(d) Benching

Add the following after the first paragraph:

"Because of the steep hillsides and the instability of the colluvial deposits on these slopes, particular attention shall be paid to the benching of the fills to ensure that they are keyed into residual soil or rock and not into the unstable material. In order for the keying of the fills to be most effectively accomplished benches shall, as far as is practicably possible, be constructed parallel to the contours. However, it will be necessary to slope the benches, as shown on the drawings, in order to facilitate drainage. Where deep deposits of unstable material are encountered which make benching through this unstable material impractical, the Employer's Agent may order the excavation of a key trench along the toe of the fill which extends into the residual material as shown on the drawings. This trench shall then be backfilled with suitable durable rock and compacted to the satisfaction of the Employer's Agent. In these cases, benches which do not extend into residual material may be constructed above the key trench. In this event the in-situ material at the base of the bench shall be compacted prior to the

placing of any fill. No fill material shall be placed on any benches until such time as the Employer's Agent has given his written approval of the excavation of the bench. The method of construction of each of the benches shall be agreed with the Employer's Agent prior to the commencement of construction of the benches. An additional payitem is provided for the construction of rock key trenches.

Bench drains shall, where ordered by the Employer's Agent, be constructed from 19,0 mm aggregate or selected rock as shown on the drawings."

Replace the first sentence of the second paragraph with the following:

"The dimensions of benches as well as the extent to which existing fills have to be cut back to form benches shall be as indicated on the drawings or indicated by the Employer's Agent."

Add the following after the second paragraph:

"In order to obtain sufficient working width for road-building equipment when the existing road fill is widened, it may be necessary to form benches that extend beyond the normal road prism or to cut back into the existing road fill or both. The Contractor shall submit his proposals in this regard to the Employer's Agent for approval before proceeding with such work. The Contractor will be paid in accordance with the relevant payment items for work required to obtain a working width of up to 4 m. Additional work required to provide a working width in excess of 4 m shall be at the Contractor's expense."

(e) Construction of high fills

Add the following:

(i) General

"The design of the major fills necessitates the incorporation of different types of fill material into different zones of the fills as shown on the drawings. The three zones that the major fills are divided into are:

- the inner zones of unselected material;
- the outer zones of selected rock fill material;
- rock toe or drainage layer zones.

(ii) Geotechnical Classification of Subgrade Materials

The subgrade materials and the fill zones in which they may be used are broadly classified hereunder.

Material Grade	Description of Rock Types	Use
1	Unweathered or slightly weathered dolerites, sandstones and hard rock.	Rock toes and drainage layers
2	Durable shales, moderately weathered sandstone, siltstone, and moderately weathered dolerite	Selected zones of fills or complete fills REINFORCED EARTH backfill (if suitable material located).

3	Highly weathered to completely weathered shale, siltstone, sandstones, mudstones	Inner zones of unselected material
---	--	------------------------------------

(h) Constructing toes for rock fill embankments

Add the following after the second last paragraph:

“Rock toes shall be constructed where shown on the drawings or where ordered by the Employer’s Agent. Approved rockfill or other material shall be used in the construction of rock toes. The rock shall be prevented from clogging by the provision of a geofabric filter as shown on the drawings. Alternatively, a transition zone, constructed with material approved by the Employer’s Agent shall be placed and compacted as shown on the drawings.

Delete the last paragraph of Clause 3307(h), and replace with “Geofabrics will be measured and paid for in different classes.”

Add the following clause:

(k) Disintegrating shale

“Disintegrating shale shall be broken down to a maximum particle size of 150mm, three days after being stockpiled on the road to allow for weathering. In addition, after compaction more than 25% of the material shall pass the 75mm sieve. For this material the Employer’s Agent may order the addition of additional water during or after compaction in order to reduce subsequent settlement of the fill. An additional payitem B33.22 is provided for this work.”

B3308 FINISHING THE SLOPES**(d) General**

Add the following to the end of the second last paragraph:

“Side drains shall also be cleaned and cleared and the resulting debris from this operation and the trimming of the cut slopes shall be disposed of as directed. No payment will be made for any work done in connection with the construction of the subbase unit the afore-going has been complied with”.

Add the following sub-clauses:

(e) Widening the Cuts

“The construction activities pertaining to this contract involve the upgrading of an existing road or portions of an existing road where existing cut and fill slopes have already been constructed. All cut and fill activities required to achieve the new road profile shall not be considered as cut or fill widening and no such claims shall be entertained. Cut and fill widening shall only apply under the strict instruction of the Employers Agent’s Representative.

The contractor shall remain responsible for obtaining the suitable amount of rock for the provision of layerworks and any widening done within these areas shall not be considered as cut widening. The contractor shall be responsible for determining the positioning of the drill holes in order to obtain the required material to complete all the works.

At certain locations cuts will be widened to more than the designed cut slope or cut width in order to obtain additional fill or layerworks material. Payment under this item will be for the volume of material as calculated vertically above the newly designed cut face and below the as built cut face excavated as per the original design.

(f) Presplitting

Rock cuttings in excess of 4m in height shall require special pre-split blasting generally at 0,8m spacing to obtain a reasonably uniform cut face finish. “

B3312 MEASUREMENT AND PAYMENT

Note: The freehaul distance for all items, where applicable, in this section has been changed to 1,0 km as per the revision in Clauses B1602(b) and (d).

SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL

B3402 MATERIALS

(a) General

Add the following at the end of the second paragraph:

"For chemically stabilised layers the material shall conform to the requirements in table B3402/5. For bitumen stabilised layers the material shall conform to the requirements in table B3402/6.
For cold in situ recycled layers the target grading shall be as indicated in table B3402/7"

Add the following after the second paragraph:

"Distinction shall be made between crushed and natural G4, G5 and G6 materials. Where the crushing and/or screening of these materials has been specified, the combined grading shall conform to the grading limits specified for G4 class material in Table B3402/1.

The same shall apply for all materials obtained from commercial sources."

In Table 3402/1 under the "G5" column delete the words "may contain approved natural fines not obtained from the parent rock" in the "Additional Fines" row and replace it with the following:

"May contain up to 15% by mass of approved natural fines (or sand) not necessarily obtained from the parent rock. Added fines shall have a LL not exceeding 25 and PI not exceeding 6."

Replace the grading section in Table 3402/1 with:

Grading	Nominal aperture size of sieve (mm)	Percentage passing through sieve by mass			The percentage by mass passing the 2,00mm sieve shall not be less than 20% not more than 70%
		Crushed material Nominal max size		Uncrushed material	
		37,5 mm	28 mm		
	53			100	
	50			95 - 100	
	37,5	100		85 – 100	
	28	86 - 95			
	20	73 - 86	87 - 96	61 - 91	
	14	61 - 76	73 – 86		
	5	37 - 54	43 - 61	31 - 66	
2	23 – 40	27 – 45	20 – 50		
0,425	11 – 24	13 – 27	10 – 30		
0.075	4 - 12	5 - 12	5 - 15		

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 3402/5 with:

"TABLE B3402/5: REQUIREMENTS FOR CHEMICALLY STABILISED LAYERS

Classification	C1	C2	C3	C4
Material before treatment	At least G2 quality	At least G4 quality	At least G5 quality	At least G6 quality
PI after treatment	Non-plastic	Non-plastic	6 max. *(1)	6 max. *(1)
UCS (MPa) *(2)	6 min.	4 min.	1,5 min	0,75 min.
ITS (kPa) *(3)	-	-	250 min.	200 min.
WDD (% loss)	5 max.	10 max.	20 max.	30 max.

Note:

- * (1) For materials derived from the basic crystalline rock group, the Plasticity Index after stabilisation shall be non-plastic.
- * (2) Unconfined Compressive Strength @ 100% Mod. AASHTO density
- * (3) Indirect tensile Strength @ 100% Mod. AASHTO density (Rapid Curing)
- * (4) Wet/Dry Durability according to Method B 8110"

TABLE B3402/7: TARGET GRADING ENVELOPE FOR COLD IN SITU RECYCLED PAVEMENT LAYERS

Sieve Size (mm)	Percent Passing		
	Cement / Lime	BSM-Emulsion	BSM-Foam
50	100	100	100
37.5	87 – 100	87 – 100	87 – 100
28	82 – 100	82 -100	82 – 100
20	72 - 100	72 - 100	72 - 100
14	60 -90	60 -90	60 -90
10	51 - 77	51 - 77	51 - 77
7	42 -65	42 -65	42 -65
5	36 - 57	36 - 57	36 - 57
0.425	12 – 26	10- 24	12 – 26
0.075	4 - 10	2 - 9	4 - 10

(b) Compaction requirements

Replace the contents of this sub-clause with the following:

"The minimum in situ dry density of gravel material shall be as specified hereinafter for the respective layers in terms of a percentage of modified AASHTO density.

Lower selected layer (G9 / G7) :	93% MDD, or 100% MDD for sand
Upper selected layer (G7) :	95% MDD, or 100% MDD for sand
Stabilized subbase (G5) :	97% MDD
Base :	102% MDD

Selected material for sidewalks,

verges and
medians (G7 or G5) : 93% except where vehicle crossings are
constructed where 95% is required.

Shoulders and wearing course : 95% MDD."

B3403 CONSTRUCTION

(b) Placing and compacting

Add the following new sub-sub clause:

"(iii) Re-gravelling

"The Contractor shall ensure that the underlying subgrade is to satisfaction of the Engineer before the construction of the gravel wearing course may commence. This shall include the submission of all relevant process control test result to the Engineer. The wearing coarse material shall be dumped on the road and then spread by means of motor graders over the full width of the required layer to such depth that after compaction the thickness of the layer complies with the requirements of the Engineers instructions and the surface of the layer is true to elevation, grade, and cross-section. At no stage along a road shall the continuous length of unprocessed dumped material exceed 0.5km. Passing opportunities will be provided within the dumped material at a minimum spacing of 200 meters.

The material shall be spread away from then area on which it has been dumped in such a manner as to minimize segregation of the various sizes of aggregate in the material. Material that is oversize in terms of the requirements for size and that remains after processing or spreading or both shall be hand knapped or bladed off the road and removed and disposed of. Where necessary, water shall be added upon the written induction of the Engineer in order to increase the moisture content. Material that is too wet shall be allowed to dry out to the correct moisture content before compaction proceeds. Compaction shall be carried out in continuous operations over the full width and length of the area being compacted until the density specified has been achieved. The require shape and cross-section shall be maintained during compaction, and all holes, ruts, and depression shall be corrected by frequent blading with a motor grader. The top of the compacted layer shall present a hard uniform compacted appearance. Any weak spots that become apparent during compaction shall be cut out and repaired with sound material at the Contractor's expense. The wearing course shall be compacted to a density of at least 95% of modified AASHTO density. Only partial payment (to a maximum of 70%) will be done, at the discretion of the Engineer until such time as compaction results have been submitted and approved by the Engineer."

Add the following new sub clauses:

"(f) Mixing / Blending of materials

Where required by the Engineer, materials from different sources shall be mixed in order to produce a final layer that meets the requirements of the specification. Materials from different sources shall be dumped on the road in the proportion ordered by the Engineer. The two materials shall be thoroughly mixed by grader or other suitable plant so as to obtain an even mix of the different types of material dumped. The layer shall be compacted in accordance with clause 3403 (b).

B3405 CONSTRUCTION TOLERANCES

(a) Level

Replace the table in the sub-sub-clause with the following

"	H_{90}	H_{max}
Selected layers	25 mm	33 mm

:

Add the following:

"Level control for the various pavement layers shall be done at least at the following intervals in the longitudinal direction:

Layer	Interval
Selected layer, sub-base, shoulders and wearing course	20 m
Base	10 m

(b) Layer thicknesses

Replace the table in the sub-sub-clause with the following:

"	D90	Dmax	Dave
<i>Selected layers</i>	<i>25 mm</i>	<i>35 mm</i>	<i>8 mm</i>
<i>Sub-base layers</i>	<i>18 mm</i>	<i>24 mm</i>	<i>5 mm</i>
<i>Base layers Shoulders</i>	<i>15 mm</i>	<i>22 mm</i>	<i>5 mm</i>
		<i>30 mm</i>	<i>0 mm"</i>

B3406 QUALITY OF MATERIALS AND WORKMANSHIP

Replace the second paragraph with the following:

"Test results and measurements will be assessed in accordance with the provisions of Section 8200."

B3407 MEASUREMENT AND PAYMENT

Amend the payment item to read as follows:

"B34.01 Pavement layers constructed from gravel taken from cut, borrow or stockpile, including free haul up to 1,0 km"

Amend this item as follows:

"Item	Unit
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B34.01 Pavement layers constructed from gravel taken from commercial source.

(a) Gravel selected layer compacted to

(i) 95% of modified AASHTO density G7 material 150 mm thickcubic metre (m³)

SECTION 3500: STABILIZATION

B3501 SCOPE

Add the following as a 3rd paragraph:

"The use of recyclers for cold in situ recycling purposes is also covered in this section, which includes cement, lime, emulsion and foam stabilisation of base and subbase layers consisting of gravel and/or crushed stone material as described in sections 3400 and 3600."

B3502 MATERIALS

(a) Chemical stabilizing agents

Delete Sub-clauses (ii) Ordinary Portland cement and (iii) Portland blast-furnace cement and replace with the following:

"Cement shall comply with the relevant requirements of SANS 50197-1:2000. The use of strength classes greater than 32,5 shall not be permitted.

Add the following:

"The Contractor must receive confirmation from the Employer's Agent on the type and quantity of stabilizing agent before ordering."

e) Water

Insert the following in the first sentence after the word "emulsions":

"... and/or production of foam bitumen..."

B3503 CHEMICAL STABILIZATION

a) Preparing the layer

Insert the following before the first paragraph:

"Moisture content tests shall not be undertaken more than one day in advance of in situ stabilization operations. Care shall be taken to ensure that samples are representative of the in situ material. Checks shall be conducted when wet weather occurs between initial testing and work commencing on any section."

(b) Applying the stabilizing agent

Replace the second sentence of the second paragraph with the following:

"Spreading shall only commence when the Employer's Agent is satisfied that the correct quantity of stabilizing agent has been placed on the layer and has given permission that the stabilizing agent may be spread uniformly over the entire surface to be treated."

Add the following to this Sub-clause:

"The minimum rate of application shall be 3,0% by mass per mass of the specified stabilizing agent such that a G5 material will meet the requirements for a C3 quality material as specified after stabilization. The Employer's Agent may order an increased rate of application. The spreading of stabilizing agent shall be done by placing bags along the road and spreading by hand using rubber squeegees. Bags which have become damaged or wet shall not be used and such bags shall be replaced at the Contractor's cost."

"For both cementitious and bituminous stabilisation, appropriate plant capable of mixing in-place in the very restricted areas is necessary. Self-propelled, recycling equipment such as in-situ recyclers which are capable of accurately adding, mixing and providing initial compaction in a single operation are considered appropriate."

Mixing in stabilizing agent

Add the following to this Sub-clause:

"Where existing and new works are joined (longitudinal joints and others), the material shall be satisfactorily mixed and compacted without any permeable or loose patches."

(d) Watering

The Contractor's attention is drawn to the provisions of the third paragraph of this standard Clause, especially the second sentence, which states:

"The moisture content of the material during compaction shall never exceed 80% of the saturated moisture content of the natural material without stabilising agents..."

This requirement will be rigorously enforced on site to reduce the occurrence and magnitude of shrinkage cracks.

(e) Compaction

Add the following to this Sub-clause:

"The stabilized material sampled from the layer for the compaction of Modified AASHTO briquettes, shall be prepared according to SANS 3001: GR54 (TMH 1 method A16 T): i.e. discard materials coarser than a 37,5 mm test sieve, and compacted according to SANS 3001: GR30 & GR31 (TMH 1 method A7). The compacted specimens are used for the determination of unconfined compressive strength, indirect tensile strength, wet-dry durability and the maximum dry density / optimum moisture content relationship."

(h) Curing the stabilized work

Amend the first paragraph of this sub-clause to read:

"The stabilized layer shall be protected against rapid drying out. Curing method (i) shall be used until method (ii) is implemented. Method (ii) shall be implemented within seven days of the completion of the underlying layer."

Add the following to method (ii):

"The covering material shall be placed by end-tipping, spread, and not compacted until the underlaying layer has cured for at least 7 days."

Add the following to paragraph:

"Method (iii) and (iv) shall not be applicable."

(i) Construction limitations

Replace the fourth paragraph starting with "No stabilization ..." with the following:

"No stabilization shall be done during windy conditions, wet weather or with falling air temperatures (7°C and dropping), or during rising air temperatures (when the air temperature is below 3°C).

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1°C during the first three (3) days after stabilization. The Contractor shall be responsible for taking the necessary precautions to prevent the layer from freezing.

All stabilized layers damaged by rain, frost or by the formation of ice in the layer shall be removed and replaced by the Contractor at his own expense.

The Contractor shall make allowance for these requirements in his construction programme."

In Table 3503/1, delete "8 hours" for Ordinary portland cements and cement blends and replace with "6 hours".

Add the following Sub-clauses to this Clause:

"(j) Stabilization agent application rate

At least ten weeks before the programmed start of stabilization the Contractor shall submit samples of proposed subbase material and stabilization agent for the Employer's Agent's approval and strength design testing. Based on the testing the Employer's Agent will determine an application rate for the stabilization."

B3505 BITUMINOUS STABILIZING

a) Preparing the material

Replace the 1st paragraph with the following:

"The material to be stabilised shall be prepared and placed as specified in section 3200. The moisture content during mixing-in of the stabilising agent shall be between 60-80% of optimum moisture content."

d) Applying the stabilising agent

Delete the entire sub-clause and replace with the following:

"The bitumen stabilising agent shall only be applied by means of an approved in situ recycling machine as specified in B3511. The recycling process as described in B3512 shall apply to the application and mixing-in of the stabilising agent."

e) Compaction

Delete the entire sub-clause and replace with the following:

The compaction process as described in B3512 shall apply."

g) Construction limitations

Replace this sub-clause with the following:

"No stabilization shall be done during windy conditions, wet weather or with falling air temperatures (7°C and dropping), or during rising air temperatures (when the air temperature is below 3°C).

Furthermore, the material temperature shall not be less than 10°C for bitumen emulsion and 15°C for foam bitumen.

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1°C during the first three (3) days after stabilization. The Contractor shall be responsible for taking the necessary precautions to prevent the layer from freezing.

All stabilized layers damaged by rain, frost or by the formation of ice in the layer shall be removed and replaced by the Contractor at his own expense.

The maximum time allowed to complete the stabilisation process shall be 6 hours.

The Contractor shall make allowance for these requirements in his construction programme."

B3506 TOLERANCES

(a) Uniformity of mix (chemical stabilization)

Add the following to this Sub-clause:

"Sub-sub-clause (ii) shall be applicable to this Contract and the control for chemically stabilized layers shall be in accordance with the method prescribed in Section 8200: Quality Control (Scheme 1)."

B3507 CONSTRUCTION OF TRIAL SECTION

Insert the following before the second paragraph:

"Prior to carrying out the trial section for cold in situ recycling, the Contractor shall assemble all items of plant and equipment that he proposes to use for the recycling operation. Only those machines he intends using for production work shall be used to construct the trial section and under no circumstances shall he be permitted to use any substitutes. The first section of pavement to be recycled shall be regarded as a trial section with the objective of:

- demonstrating that the equipment and processes he proposes to employ are capable of constructing the recycled layer in accordance with the specified requirements;
- determining the effect on the grading of the recycled material by varying the forward speed of the recycling machine and the rate of rotation of the milling drum; and
- determining the amount of rolling necessary to achieve the compaction requirements.

The trial section shall be at least 200m in length and shall cover the full lane-width or half-road width in accordance with the geometry of the road and the accepted work plan.

To allow the Employer's Agent sufficient time to assess all aspects of quality of the completed trial section and contingent on the results being satisfactory, the Contractor shall programme to start production recycling work no sooner than one week after constructing the trial section.

Should the Contractor make any alterations in the methods, processes, equipment or materials used, or if he is unable to comply consistently with the specifications due to variations in the in-situ material, or for any other reason, he may be required to undertake further trial sections before continuing with the permanent work."

Insert the following new paragraph after the third paragraph:

"For cold in situ recycling provision is made for payment for the first approved trial section. Such payment will be made as an extra-over to the various payment items for recycling work together with all additives that will be measured and paid as normal production work. Any further trial sections ordered by the Employer's Agent shall likewise be paid provided they are approved."

B3509 QUALITY OF MATERIALS AND WORKMANSHIP

Replace the second paragraph of this clause with the following:

"The uniformity of mixing and stabilizer content will be controlled by the Employer's Agent by visual checking of the number of bags of stabilizing agent applied and observation of the mixing process and cementitious binder content tests on a day's work.

The test results and measurements will be judged in accordance with the provisions of Section 8200. Bitumen stabilised layers shall be judged on the same criteria as chemically stabilised layers."

Add the following paragraphs:

"The Employer's Agent shall be notified in good time to enable him to conduct tests himself.

Sample preparation and testing for cement stabilization testing shall be done by means of the Rapid Cure Method as described in clause B8110. The Employer's Agent will use unconfined compressive strength (UCS) tests for evaluating layer compliance. The Contractor shall note that this method requires the samples to be taken immediately after the material has been mixed with the water and stabilizer and spread, but before the layer is compacted, and shall therefore make the necessary arrangements timeously and allow for the time to collect the samples."

The stabilized material sampled from the layer for the compaction of modified AASHTO briquettes, shall be prepared

according to SANS 3001; GR54; i.e. discard material coarser than a 37,5 mm test sieve, and compacted according to SANS 3001; GR31.

Any delamination of the completed layer (biscuiting), identified by the hollow sound caused when a chain is dragged over the stabilized layer, shall be removed and repaired prior to the construction of subsequent layers. The repair method shall be approved by the Employer's Agent. No payment will be made for repairs. Process control for cold in situ recycling

The Contractor shall establish a comprehensive process control system for the recycling work. The following daily reports shall be submitted as a minimum:

- The production plan;
- The completed pre-start check list;
- Weather conditions and temperature measurements;
- Details of the recycling work completed during the day with the following information for each cut that was made:
 - start and end chainage;
 - depth of cut (including a schedule of dip measurements);
 - width of application of stabilising agent(s);
 - nozzle settings (closures) for each spraybar (where relevant);
 - computer data input;
 - cement / lime spreading check measurements (where relevant); and
 - compaction data in electronic format from the integrated compactometer device fitted to the primary roller (if applicable):
- Where the material is treated with a bitumen stabilising agent, the following shall be included:
 - bitumen emulsion or Pen-grade bitumen consumption;
 - average temperature and pressure measured at the spraybar; and
- Relevant comments / information concerning the recycling operation. These shall include but shall not be limited to:
 - standing time and the reason(s);
 - details of any non-routine tests that were undertaken;
 - any changes in the weather during the day (e.g. strong wind from 13:00); and
 - relevant instructions received and from whom; and
- The location where the daily sample of pulverised material was taken."

B3510 MEASUREMENT AND PAYMENT

B35.01 Chemical stabilization extra-over unstabilized compacted layers

Add the following to the payment paragraph of this item:

"The tendered rate shall also include full compensation for blending any of the different stabilization agents, if required, and curing the stabilized layer as specified in Sub-clause B3503(h)."

Item

Unit

B35.02 Chemical stabilizing agent

Replace the full stop at the end of the third paragraph with the following:

" and layer dimensions."

“B3511 PLANT AND EQUIPMENT FOR COLD IN SITU RECYCLING

All cold in situ recycling shall be done utilising purpose-built wheel-mounted in situ recycling machines. The following specifications are applicable to such machines. Where the Contractor intends using any other type of machine to recycle (e.g. a modified track-mounted milling machine) he shall submit for the approval of the Employer's Agent a full motivation for using such a machine, including a detailed work plan describing the recycling / mixing process and subsequent compaction / levelling processes that will produce a layer that meets the specified end product requirements.

(a) In situ recycling machines

In situ recycling shall be carried out using a special-purpose recycling machine to break down and recover material from the prescribed horizon in the upper layers of the existing pavement, blended together with any imported material, stabilising agent(s), water and any other specified additives. The machine employed shall be capable of achieving the required grading and consistency of mix in a single pass.

In addition, the recycling machine shall meet the following requirements:

- (i) Be factory-built by a proprietary manufacturer having a demonstrable track record and manufacturing history in producing such equipment;
- (ii) If older than 10 years, the machine shall be certified by the manufacturer or manufacturer's authorised agent to confirm operational fitness-for-purpose dated not more than 3 months earlier than the date on which it commences work on the contract;
- (iii) Have a level-control system to maintain the cut depth within a tolerance of ± 10 millimetres of the required depth during continuous operation;
- (iv) The milling / mixing drum (the “cutter”) shall have a minimum cut width of 2 metres with a facility to change the speed of rotation. The machine shall be capable of recycling to the maximum depth specified in a single pass;
- (v) The cutter shall rotate within an enclosed chamber (the mixing chamber) into which water and any liquid stabilising agents are injected under pressure at the specified application rate relative to the mass of material in the mixing chamber.
- (vi) The cutter shall be mounted on a swing arm that is separate from the housing of the mixing chamber, thereby allowing the volume of the mixing chamber to increase as the depth of cut increases.
- (vii) Have a liquid application system dedicated to adding water to the material in the mixing chamber;
- (viii) Where a bitumen stabilising agent is to be applied, a second separate liquid application system shall be fitted to the mixing chamber. Such system shall be appropriate for the addition of either bitumen emulsion or foamed bitumen;
- (ix) All liquid application systems shall be controlled by a micro-processor / flow meter combination that accurately regulates pump delivery (flow rate) with the speed of advance.
- (x) All liquid application systems shall include a dedicated spraybar that spans the full width of the mixing chamber. Each spraybar shall be equipped with multiple injection nozzles mounted equidistant along the length of the bar at a maximum interval of 200mm with the ability to close off selected nozzles, thereby allowing the width of application to be preset;
- (xi) Where two liquid application systems are used, the water application spraybar shall be mounted below the other spraybar (relative to the direction of rotation of the cutter) such that the recycled material encounters the water spray before the stabilising agent; and
- (xii) The recycler shall have sufficient power to recover and mix the existing pavement material together with all additives to produce a homogeneously mixed material whilst pushing (or

pulling) bulk supply tanker(s).

Before any recycling work commences, the Contractor shall submit a specification sheet (obtained from the manufacturer) stating the capacity, pressure and temperature limits for each liquid application system that will be used to treat the recycled material.

The recycling machine that the Contractor intends deploying shall be subject to the Employer's Agent's approval and he shall be entitled to reject a machine which, in his opinion, may not be capable of producing a consistent product when recycling to the specified depth(s).

(b) Plant for compacting and finishing the treated layer

The treated material exiting from the rear of the recycler shall be processed using suitable compaction equipment and graders to achieve a layer that meets the specified requirements. Sufficient plant and equipment shall be deployed to enable the treated material to be processed and finished off within the time limitations specified below.

(i) Primary compaction

Initial compaction shall be undertaken immediately behind the recycling machine using a vibrating single-drum padfoot roller selected in accordance with the following guidelines:

TABLE B3511/1 GUIDELINES FOR SELECTION OF PRIMARY ROLLERS

Minimum static mass of roller (tons)	Final layer thickness			
	< 150mm	150 – 200mm	200 – 250mm	> 250mm
	12	14	16	20
Minimum amplitude at frequency range	1.8mm @ 30 – 35Hz			

It will be advantageous if the roller is equipped with an integrated compactometer device to indicate and record the level of density that is achieved with each successive pass of the roller. These records can be used by the Contractor for process control to indicate that the maximum density has been achieved.

(ii) Secondary compaction

After primary compaction and shaping of the layer a smooth drum vibrating roller with a static mass not less than 10 tons and not more than 14 tons shall be used to compact the upper portion of the layer.

(iii) Finishing of the layer

After the final level of the layer has been obtained a pneumatic-tyred roller (PTR) with a minimum static mass of 18 tons and mounted on at least seven (7) tyres shall be used to finish off the layer.

(c) Bulk tankers

Only tankers with a capacity exceeding ten thousand (10 000) litres shall be deployed to supply the recycling machine with water and/or liquid stabilising agents. Tankers containing a bitumen stabilising agent shall be fitted with appropriate tow hitches, one in front and one at the rear, thereby allowing the tanker to be pushed from behind by the recycling machine, and to push a water tanker in front. No leaking tanker will be permitted on the site.

B3512 CONSTRUCTION OF LAYERS BY MEANS OF COLD IN SITU RECYCLING

(a) Requirements before recycling commences

(i) Stabilisation mix design procedure for cold in situ recycling

The following mix design procedure shall be followed as a minimum requirement for each stabilisation type:

Within 30 days of the contractor taking possession of the site, the contractor shall commence with the mix design process. This process shall be carried out on samples of neat materials extracted from the full depth of the recycling horizon. Bulk samples shall be extracted by means of the recycling machine proposed for the stabilisation work. For each material uniform section identified, two separate bulk samples shall be extracted from the recycling horizon and used in the stabilisation mix design process. The location at which such samples are taken shall be indicated by the Employer's Agent.

Stabilisation mix designs shall be carried out in accordance with the latest edition of the following best practice guideline publications:

- Cementitious stabilisation: SAPEM, SANRAL M5 manual and TRH 13

The contractor shall construct a trial section for the approved mix design developed for the first uniform section. Recycling work may only commence once the trial section has been approved by the Employer's Agent. Thereafter, it will be incumbent on the contractor to obtain the necessary approval for the relevant mix design for each uniform section ahead of the recycling work. Should the situation arise where the contractor has not followed the mix design procedure to obtain the required approval of the Employer's Agent recycling work shall cease until such time as the prescribed process for approval has been followed. The contractor shall have no recourse for costs incurred as a consequence of such a delay.

(ii) Setting out and control of the work for cold in situ recycling

Unless otherwise stated in the specifications, the contractor shall establish his own reference and level beacons for the setting-out and control of the works.

(1) Layers constructed utilising existing levels

The existing horizontal alignment shall be retained and only minor modifications made to the vertical alignment, as described below.

The contractor shall establish a series of level control poles placed at a constant offset

on both sides of the road at a maximum interval length indicated in clause B3405(a). At each level control location, the contractor shall record the existing road surface levels at the centre-line and at the outer limits of each lane and prepare a series of graphs (for sections not less than 2.0km in length) with the recorded levels plotted at an exaggerated scale against the km distance. Final levels for the new stabilised layer shall be selected in accordance with a “best-fit” principle, taking into account the following:

- the required camber or super elevation details at each location;
- the minimum requirements governing changes in grade (longitudinal grade line);
- the thickness of the existing base layer; and
- minimising the amount of pre-work required (pre-treatment and/or importing new material) before recycling can commence.

At least two weeks before recycling work is scheduled to commence on any specific section, the contractor shall select the best-fit design levels and submit these proposals to the Employer’s Agent (both as a schedule of longitudinal grade, cross-fall and final surface levels, as well as a drawing with the design lines superimposed on the existing levels) for approval or amendment.

The Employer’s Agent will take control measurements to determine the accuracy and adequacy of the reference beacons / control poles, and may instruct the contractor to correct any faulty work and to take and provide such additional measurements and details as may be deemed necessary.

Survey work will not be measured and paid for separately and compensation for any work involved in staking, setting out, taking levels, determining the final surface elevations and transferring these design levels on to the level control poles (including the cost of all labour materials and reinstatement if required for any reason) will be deemed to be included in the rates for the relevant payment items for cold in situ recycling. No payment will be made for any inconvenience or delay caused by compliance with these requirements.

(2) Layers constructed utilising new levels

Layers shall be constructed according to new design levels as indicated on the drawings.

(iii) Production Plan

Prior to the start of a shift, the contractor shall prepare a production plan detailing his proposals for the forthcoming shift’s work. As a minimum, this plan shall include a sketch showing:

- the overall layout of the length and width of road intended to be recycled during the day, broken into the number of parallel cuts required to achieve the specified width of treatment;
- the location of and overlap width (minimum 150mm) at each longitudinal joint between adjacent cuts, together with the location of the inner and outer wheel paths of each

- lane affected by recycling;
- the sequence and length of each cut to be recycled before starting on the adjacent or following cut; and
- an estimate of the time required for recycling each cut and for finishing off the work.

(iv) Preparing the surface

Before any recycling work commences, the surface of the existing road shall be prepared by:

- cleaning all vegetation, garbage and other foreign matter including road studs from the full road width, including any adjacent lanes or shoulders that are not to be recycled;
- removing any standing water;
- pre-milling to remove high-spots and/or pre-pulverising where ordered;
- providing a reference line to assist the operator to accurately steer the recycling machine, and
- record the location of all road marking features (e.g. extent of barrier lines) that will be obliterated by recycling.

(v) Surface shape and level requirements

Where surface defects are to be corrected and/or modifications made to the grade line, instructions will be issued detailing the new surface level requirements. These may be achieved prior to recycling by either pre-milling to remove in situ material, by pre-pulverising, pre-shaping and pre-compacting the pulverised material, or by importing material and accurately spreading on the existing road surface, as described below.

(vi) Cross-mixing

Where cross-mixing is ordered, the material shall be bladed by grader or utilising other mixing equipment to achieve a uniform blend of material throughout the layer. The layer shall be compacted and shaped before being in situ recycled,

(ix) Addition of imported material

Where instructed to import material for blending and/or as make-up material for the purpose of shape, level or material grading correction, the prescribed material shall be imported and spread on the existing road surface prior to recycling. The method of placing and spreading the imported material shall be such as to achieve the required surface levels and will require the use of a paver, motor grader or other such plant. All imported material shall be pre-compacted to a minimum of 95% of the mod AASHTO density.

Nowhere shall the thickness of imported material exceed the recycling depth.

(b) The recycling process

(i) Before starting

Prior to starting to recycle, the production planned for the day shall be approved by the Employer's Agent and the following checks carried out:

- All relevant temperatures shall be measured and recorded, including: air temperature;
- the material in the recycling horizon; and
- the contents of all bulk supply tankers (including water).
- All plant and equipment is on site and the operators of the different machines are adequately trained and briefed on their particular tasks.
- The recycling machine has been prepared and set up for the first cut. Such preparations shall include:
 - checking that the mixing chamber is free of any material build-up that may affect the functioning of the application nozzles on all relevant spraybars;
 - the cutting tools have sufficient remaining life to complete the first cut without stopping;
 - all relevant liquid application systems are functioning, free of blockages and the in-line filters are clean. Where a bitumen stabilising agent is applied, a relevant check-sheet (similar to the example forms included in the Appendices of SAPEM and TG2) shall be diligently followed, signed off and submitted to the Employer's Agent;
 - the on-board computer has been correctly set up and the input data verified;
 - the spraybar is set up with the correct nozzles selected to achieve the required width of application;
- Bulk supply tanker(s) are coupled correctly to the recycling machine, all feed pipes are properly connected, bled of air and free of leaks. Where a bitumen stabilising agent is applied, the feed pipe shall only be connected immediately before work is about to start. Where the stabilising agent is foamed bitumen, the outlet plumbing on the tanker shall be checked and any "cold plug" of bitumen removed before attaching the feed pipe.
- Where cement or lime is spread by hand on the road surface ahead of the recycling machine, the bag spacing shall be checked at random intervals and recorded.
- A clear guideline is in place for the recycling machine to follow and is correctly aligned relative to the road geometry.
- The integrated compactometer system on the primary roller properly functioning and has been set up to record the correct relevant data.

(ii) Recycling

The recycling machine shall be set up and operated to ensure that:

- The speed of advance is regulated (below the maximum allowable of 10m/min) to achieve;
 - adequate pulverisation of all bound materials in the existing pavement to produce a material that meets the grading requirements;
 - operating pressures and flow rates in all liquid application systems that remain within the limits prescribed by the manufacturer of the machine.
- The depth of recycling coincides with the line and level specified for the bottom horizon of the new stabilised layer. The bottom of cut horizon shall be checked at least once every 100m of cut using a suitable T-bar to dip from a stringline pulled between the relevant final level reference marks on the level control poles.

- The planned width of overlap along all longitudinal joints is maintained and the line of cut does not deviate laterally by more than 50mm from that required (measured from the operator's guideline that shall be positioned for each and every cut).
- The process is continuous with a minimum number of stops. Transverse joints that occur every time the recycling machine stops are properly treated to achieve continuity of stabilisation and moisture across the resulting joint.
- The application rate of liquid stabilising agent(s) and water is uniformly continuous across the required width of treatment, including all longitudinal joints.
- The temperature across the width of material exiting the mixing chamber shall be checked at least once every 100m using a digital thermometer with a laser beam target held no more than 100mm above the material. Where the temperature varies consistently by more than 3°C along a particular longitudinal strip $\pm 200\text{mm}$ wide, the recycling machine shall be stopped and the relevant application nozzles on all spraybars that coincide with the offending strip shall be checked for blockages.
- The moisture content of the treated material is continuously monitored and the application of water adjusted to achieve a uniform moisture content as specified.
- The mixed material exiting from behind the recycling machine is struck off by the rear door of the mixing chamber with sufficient pressure applied to obtain a uniform surface that is free of valley lines, empty pockets and particle segregation.

The advance speed of the recycling machine and the speed of rotation of the recycling drum shall be set to obtain the required grading and sufficient mixing of all components (recycled material and additives) so that a homogeneous material is produced.

(c) Primary compaction

Recycling machines are configured such that their rear wheels run on top of the treated material towards the outer extremities of the cut. To prevent introducing a density differential across the width of cut, primary compaction shall be completed prior to any grader work commencing. If the treated material is pre-shaped by grader prior to being compacted, the work shall be summarily rejected.

A single-drum vibrating roller shall be deployed to compact the recycled material immediately behind the recycling machine. This roller shall travel forwards and backwards at a constant speed (maximum 3km/hr (50m/min)), remaining within the confines of the recycled cut. Recycled material covering the outer extremities of cut shall be moved at regular intervals ($\pm 5\text{m}$) to expose the cut line, thereby allowing the operator to remain within the cut width.

Successive lengths of recycled / treated material shall be compacted (each approximately 50m in length).

Rolling shall continue on each section until the maximum achievable density has been reached. Where an integrated compactometer device is utilised normally rolling have to continue until the device indicates that no further density is being achieved over at least 80% of the length of the section (i.e. maximum achievable density has been reached). Should the device indicate a consistent loss of density at any point during primary compaction (as indicated over two successive recording passes), rolling on that section normally has to be terminated and the roller moved forward to start compacting the next section.

After each day's production, the contractor shall provide the Employer's Agent with his process control records of the densities achieved for primary compaction. Where a compactometer device was used an electronic copy of the data file containing detailed compaction records for the day's work shall be provided to the Employer's Agent. As a minimum, the records shall include the number of passes made on each section of every cut made by the recycling machine, the compaction achieved on every cut as well as the following data for each 2m interval along the length of each cut:

- the compactometer reading (where applicable);
- the amplitude of vibration; and
- the advance speed of the roller.

These records will constitute the contractor's Process Control for primary compaction.

A "roller pass" shall be defined as a single unidirectional pass made by the roller. Where the roller travels forwards and backwards over the same point, it would have made "2 passes".

A "recording pass" is a roller pass where the compactometer readings are stored (recorded) and used for comparison purposes. Recording passes are always in one direction of travel only. Recordings shall be made commencing with the first pass and every alternative subsequent pass that is made (i.e. 1, 3, 5, 7, etc.)

The primary compaction process shall follow at the same rate as the recycling operation. The contractor shall ensure that a sufficient number of rollers are available to achieve this.

(d) Final levels and secondary compaction

- (i) After completing the primary compaction on all adjacent cuts that make up the width of pavement that is recycled in one shift, the surface shall be pre-shaped and final levels cut before final compaction is applied. Pre-shaping shall address the lateral shift of material resulting from the surface inclination (cross-fall). The moisture in the layer shall be controlled during this process. No roller will be allowed onto the layer during the pre-shaping process to prevent the lamination phenomenon (biscuiting) occurring,

Secondary compaction shall then be applied using the smooth-drum vibrating roller operating in low amplitude vibration mode. The outer cut extremities shall be exposed as a guide for the roller operator to ensure that the compaction effort is directed only on to the recycled material (thereby preventing any "bridging across" from the unrecycled pavement).

(e) Finishing off of the layer

When the grader work and secondary compaction of the recycled base is complete, the surface will be sprayed with an appropriate amount of water or diluted emulsion and a pneumatic tired roller (PTR) applied. Such slushing shall be undertaken in short sections ($\pm 40 - 60\text{m}$) over the full width of the recycled layer. The PTR shall make sufficient passes and the surface must be sufficiently wet to generate a "mild" slush and close up voids in the surface together with any other grader-induced defects and achieve a tightly-knit surface finish. Rolling with the PTR must continue until no free water is visible and a uniform appearance, from a visual perspective, is achieved. Personnel

equipped with squeegees shall be deployed to move the slush over areas showing signs of roughness and/or segregation. Squeegees shall be used to remove any surplus slush to the side of the road. Whilst still damp, the slush shall be broomed off the road using hand brooms. If a mechanical powered broom is used care shall be taken not to damage or loosen the surface. The final surface shall have a smooth, tightly-knit finish with no "biscuit" layers. Brooming of the surface is not required if the road is opened to traffic. The slushing process must be completed on the same day that stabilisation work is completed. The slushing process is dependent on the material properties and therefore the desired finish must be determined through trial sections.

Where the recycled material is treated with a bitumen stabilising agent and the intention is to open the finished layer to early trafficking, a diluted emulsion (15% residual bitumen) applied at between 0.5 and 0.75 litres/m² depending on the material type may be substituted for water in the slushing process. A water tanker fitted with an appropriate spraying system (or binder distributor) shall be used to spray a uniform amount of dilute emulsion on the surface before applying the PTR. Additional dilute emulsion may be applied where the first application failed to generate sufficient slush under the wheels of the PTR. Rolling with a PTR should continue until a uniform appearance, from a visual perspective, is achieved and should stop before when the emulsion shows signs of breaking and becoming sticky/tacky.

Once slushing is complete, the entire area may, on instruction of the Employer's Agent, receive a fog spray application using the same dilute emulsion (applied at a nominal rate of 0.75 litres/m²) and left to dry back before opening the road to traffic.

Dilute emulsion for slushing and fog spraying shall only be applied using an appropriate water tanker or binder distributor.

B3513 PROTECTION AND MAINTENANCE

(a) Trafficking the completed layer

(i) Cementitious stabilisation

Under no circumstance shall traffic be allowed to travel on layers of cement stabilised material.

(b) Maintenance of the stabilised layer

Until the surfacing is applied, the Contractor shall maintain the surface integrity of the new layer by deploying staff on a daily basis to visually monitor all sections under traffic and take immediate action as soon as signs of ravelling are detected. Such action shall include the local application of dilute emulsion (applied by hand using a large paint brush) or the application of a further fog spray.

Where damage occurs as a consequence of the surfacing not being applied within the time limits specified in clause B3512 (c) below, the Employer's Agent shall have the right to summarily reject the affected layer and the Contractor will have no recourse for the costs he incurs in removing the layer and replacing it with fresh stabilised material.

(c) Application of surfacing

To prevent environmental degradation and/or abrasion damage, new base layers shall be surfaced as soon as the moisture content at all positions within the layer is below 50% of optimum moisture content according to SANS 3001-GR30 (replaced TMH 1, Method A7).

The maximum time delay between completing a new base layer and applying the surfacing shall be 14 days (with due allowance made for inclement weather)."

SECTION 3600: CRUSHED STONE BASE

B3602 MATERIALS**a) Requirements for crushed aggregate**

After the first sentence delete the remainder of the paragraph and replace with the following:

"The aggregate shall not contain more than 0,1% by mass of unwanted material such as wood, coal or similar organic material.

Aggregates containing mica, such as granite, gneiss, mica schist, pegmatite, sandstone shall not contain more than 2% by mass of free mica, especially muscovite, when assessed by visually separating the particles, or more than 4% by volume when assessed by means of microscopic slides. Aggregate containing easily detectable quantities (more than 1%) of olivine, serpentine and sulphide minerals such as pyrites and marcasite, must be considered with caution, and may warrant additional evaluation to the satisfaction of the Employer's Agent. Argillaceous rocks may only be used if specified in the project specifications, or with the Employer's Agent's written approval.

Soft or weathered particles shall be controlled by the Durability Mill Index values specified in B3602(e) Durability.

Provision has been made in clause B8108(b)(iii), calculation, for the determination and calculation of the Apparent Density for aggregates with a total water absorption greater than 1,5%, when total water absorption is determined according to SANS 3001-AG20 (replacing TMH1 method B14) and SANS 3001-AG21 (replacing TMH1 method B15)."

c) Grading requirements

Replace entire clause with the following:

"The target grading, after compaction, shall be as near as possible to the mean of the specified grading envelope listed in table B3602/1 and shall be continuous with no marked gaps or excessive quantities of any particular size. The mean grading of each lot (minimum of 4 but preferably 6 test points per lot) shall conform to the approved target grading plus or minus the tolerances specified in table B3602/4. However, no target grading plus tolerance can be set outside the original grading envelope in table B3602/1."

Table 3602/1

In table 3602/1 delete "85% of bulk relative density" and replace with: "88% of Apparent Relative Density"

Replace the grading section in Table 3602/1 with:

	Nominal aperture size of sieve (mm)	Percentage passing through sieve by mass			
		Nominal max size			
		G1	G2	G3	
		37.5mm	37.5mm	37,5 mm	28 mm
Grading	37,5	100	100	100	
	28	86 - 95	86 - 95	86 - 95	
	20	73 - 86	73 - 86	73 - 86	87 - 96
	14	61 - 76	61 - 76	61 - 76	73 - 86
	5	37 - 54	37 - 54	37 - 54	43 - 61
	2	23 - 40	23 - 40	23 - 40	27 - 45
	0,425	11 - 24	11 - 24	11 - 24	13 - 27
	0,075	6 - 10	6 - 10	6 - 10	5 - 12

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 3602/4 with:

TABLE B3602/4

Sieve size (mm)	Permissible deviations by mean values (% by mass)		Permissible deviations by individual values (% by mass)	
	Nominal maximum size (mm)			
	37,5	26,5	37,5	28
28	± 5		± 5	
20	± 5	± 5	± 7	± 7
14	± 5	± 5	± 7	± 7
5	± 5	± 5	± 7	± 7
2	± 4	± 4	± 5	± 5
0,425	± 3	± 3	± 5	± 5
0,075	± 2	± 2	± 3	± 3

Note:

Refer to standard COLTO table for COLTO grading if required

Add the following sub-clauses:

“e) Durability

The durability property of aggregates derived from the basic crystalline group shall be assessed by means of the Ethylene Glycol Durability Index. When tested in accordance with the method prescribed in B8105(g) the Durability Index shall not exceed four. In addition, the 10% FACT value obtained after soaking in ethylene glycol for four days shall not be less than

50% of that obtained on the unsoaked sample. Where any values are obtained that fall outside the above requirements, a detailed assessment of the quarry shall be undertaken together with a specialist mineralogical evaluation of both the coarse as well as fine fractions in order to assess the long-term durability properties of the material.

For Basic crystalline rocks, Arenaceous rocks, Argillaceous rocks and Diamictites the Durability Mill Index (DMI) shall be less than 125. For all other rock types the Durability Mill Index (DMI) shall not be more than 420, subject to the % passing the 0,425mm sieve not increasing by more than 8 percentage points during the Durability Mill test.

(f) Material from commercial sources

The following additional requirements shall apply:

- (i) The use of aggregate derived from arenaceous or argillaceous rock groups will not be permitted.
- (ii) The aggregate shall be subjected to the tests and their frequencies specified in Table B3602/5. The material may only be placed on the road when all of the specified tests have been completed and have passed.

TABLE B3602/5

Test Description	Frequency (test / m ³ of compacted base)
Aggregate Crushing Values (10% Fact)	5 000
+ Ethylene glycol durability testing *	5 000
x Atterberg Limits	
PI -0,425	1 000
PI -0,075	2 000
+ Soluble salts	10 000
Grading	10 000
+ Ball mill	5 000

* Test method B8117 durability index shall not exceed 1 (one).

x PI -0,424 = Plasticity Index determination on - 0,425 mm material. Pi - 0,075 = Plasticity Index determination on - 0,075 mm material.

+ The cost of these tests is for the Contractor's account.

(g) Drainage Blanket

"Crushed stone drainage blanket to Table B3602/6. The crushed stone drainage blanket shall be coarse graded (37,5mm nominal size) and shall conform to the following requirements as detailed in Table B3602/6 below.

Table B3602/6 Crushed stone drainage blanket

Gradation envelope for drainage material	
SIEVE SIZE mm	GRADATION ENVELOPE Percentage passing by mass

Gradation envelope for drainage material	
SIEVE SIZE mm	GRADATION ENVELOPE Percentage passing by mass
53	100
37,5	75 – 100
19	48 – 84
13,2	40 – 62
9,5	34 – 54
4,75	24 – 35
2	18 – 21
0,425	6 – 10
0,075	0 – 5

B3604 CONSTRUCTION

(a) Spreading and mixing

Add the following to this Sub-clause:

"Level control for the construction of the base layer shall be installed at 10 m intervals. Level control during construction may be done at every second control position (20 m intervals) as long as the starting position is alternated to ensure all control positions are utilized during the construction of the layer.

No additional payment shall be made for the installation or use of level control at 10 m intervals."

(b) Compaction

Replace that last sentence of the first paragraph with:

"The density of the layer shall be tested at each third of the layer thickness."

Surface preparation of the base

Sub-clause (i) shall be applicable to surface preparation of the base.

Replace the final paragraph in sub-sub-clause 3604(c)(i) with:

"Slushing of the base, is compulsory and shall be carried out within 48 hours after completion of the compaction. Even if the specified density is achieved without slushing or before completion of the slushing process, the full slushing process must still be completed."

Delete sub-sub-clause (ii) Multi-stage process (water or slurry rolling).

(h) Joints between existing layers and new or reconstructed layers

Add the following at the end of the first paragraph of this Sub-clause:

"During the working of the first half-width, the surface of the base layer shall be constructed a minimum of 200 mm past

the centre longitudinal joint position in order to obtain proper compaction on the joint position.

During the working of the second half-width, the centre longitudinal joint between any reworked or new layer shall be cut back at least 100 mm into the first half-width to remove any loose or disturbed material and to ensure a sound longitudinal joint between the two half-width sections.

The Contractor shall ensure that any gravel, crushed stone or fines carried onto the surfaced half width accommodating traffic during the working of the pavement layer is removed immediately by hand brooming. In addition, all soil fines arising from the slushing of the base and carried on to the surfacing of the first half width shall be removed before the second half width is primed."

B3605 PROTECTION AND MAINTENANCE

Replace "moisture content of the layer" in the first paragraph with "moisture content of the upper 50mm of the layer."

Add the following to the end of the second sentence:

"as determined according to SANS 3001-GR30 (replacing TMH 1 method A7)."

B3607 QUALITY OF MATERIALS AND WORKMANSHIP

Replace the last paragraph of this Clause with the following:

"Test results and measurements shall be assessed in accordance with the provisions of Section 8200. (Ls = 88,0 or 89 % as ordered)."

B3608 MEASUREMENT AND PAYMENT

Delete the first paragraph and replace it with the following:

"Note: No additional or extra over payment shall be made for work in restricted or confined areas."

"Item	Unit
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B36.01 Crushed Stone Base

Add the following item

(f) Crushed stone drainage blanket.....	cubic metre (m ³)"
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The unit of measurement shall be the cubic metre (m³) of completed crushed-stone drainage blanket in place and compacted to the specified density. The quantity shall be calculated from the net authorised dimensions of the drainage blanket as shown on the drawings or prescribed by the Employer's Agent. No adjustments shall be made to the net specified dimensions for level and thickness tolerances, overbuilding and/or other wastage.

SECTION 5100: PITCHING, STONEWORK AND PROTECTION AGAINST EROSION

B5102 MATERIALS**a) Stone**

Replace the 2nd paragraph with the following:

“Unless suitable stone can be located on site, the stone for pitching shall come from commercial sources but, from whatever source, its use shall be subject to the prior approval of the Employer’s Agent.”

c) Sand**(ii) Sand for bedding**

Replace this sub-sub-clause with the following:

Sand for bedding used for paving blocks shall not contain any deleterious impurities and shall comply with the requirements given in table B5102/1.

TABLE B5102/1

Sieve size (mm)	Percentage passing
10	100
5	95 – 100
2	73 – 86
1	43 - 78
0,600	25 – 60
0,300	10 - 30
0,150	5 – 15
0,075	5 - 10

Note:

Refer to standard COLTO table for COLTO grading if required

B5106 SEGMENTAL BLOCK PAVING**d) Edge beams**

Add the following paragraph:

“Where concrete edge beams are constructed the relevant specifications under section 2300 shall apply.”

SECTION 5200: GABIONS

B5202 MATERIALS

(f) Filter fabric below the gabions

Replace "sub-sub-clause 2104(a)(iii) for grade 3 filter fabric" in the first sentence with "geotextile fabric grade 1 as specified below."

Add the following:

"(i) Composition and manufacturing

The synthetic-fibre filter fabric, or geotextile, shall be manufactured from a synthetic polymer processed into a permeable, homogenous sheet. Geotextile of non-woven construction is preferred, and woven geotextiles will be considered only if published data can be provided which show the satisfactory long-term performance of these geotextiles in an environment similar to that in which they are to be used.

On account of the temperature and moisture susceptibility of polyamide, this synthetic product is not considered acceptable.

(ii) Classification

The geotextile is classified according to the mechanical properties thereof, viz. its penetration load, puncture resistance and the minimum water-percolation rate as measured in the permeability test. The table below gives values for the properties.

Table B5202/2 Grade 1 Geotextile Properties

PROPERTY	GRADE 1	TEST METHOD
Penetration Load (minimum), N	3800	3,5 of SABS 0221-1988
Puncture Resistance (maximum), mm	14	Clause 8114
Water percolation (minimum) Water	20	3,7 of SABS 0221-1988
Mass per unit area (minimum), g/m ²	320	3,4 of SABS 0221-1988

Notes:

- The standard atmosphere for testing and the preconditioning atmosphere for all geotextile tests (SABS tests and others) shall have a relative humidity falling within the rate of 0 to 80% and a temperature within the range of 15°C to 35°C.
- The resistance of a geotextile to puncture is the average diameter of the hole formed when a 45° cone with a mass of 1 kg is dropped through 500 mm onto the geotextile fixed in the holding device.

MINIMUM GRADE CLASSIFICATIONS OF GEOTEXTILES

PROPERTIES	UNIT	GRADE 1	GRADE 2	GRADE 3	GRADE 4	TEST METHOD
TENSILE STRENGTH (MINIMUM)	KN/M	10	13	18	30	3.6 OF SANS 0221
PENETRATION LOAD (MINIMUM)	KN	1,5	2,5	3,6	5,0	3.5 OF SANS 0221
PUNCTURE RESISTANCE (MAXIMUM)	MM	30	25	18	10	CLAUSE 8114
WATER PERCOLATION (MINIMUM)	L/S/M ²	20	15	15	5	3.5 OF SANS 0221

(iii) Durability

A geotextile is required to comply with the following specification:

- Resistance to chemical attack."

B5204 CONSTRUCTING GABIONS**(c) Assembly**

Add the following:

"Gabion mattresses may be cut and rejoined to form an appropriate curved shape. An extra over rate shall apply when mattresses have to be cut and joined on instruction from the Employer's Agent."

B5205 MEASUREMENT AND PAYMENT

Change the following payment Clause:

B52.03 Gabions

Item	Unit
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(a) PVC Coated Galvanised gabion boxes 1.0m wide, 2.7mm diameter

(i) 1.0m x 1.0m x 80mm x 100mm

(i) 0 – 3 m high – Box 1m longcubic metre (m³)

(ii) 3 – 4 m high.....cubic metre (m³)

(iii) 4 – 5 m high.....cubic metre (m³)

Add the following payitems:

Item	Unit
B52.05 Concrete Class 15/19 in Blinding Layer and Cavities	cubic metre (m³)

The unit of measurement shall be the cubic metre of concrete in the blinding layer or backfilling cavities, constructed to the line and level indicated on the drawing or as instructed by the Employer's Agent.

The tendered rate shall include full compensation for furnishing all material and labour, including formwork as necessary, mixing, placing and compacting the concrete, and screeding to a Class U1 surface finish.

Item	Unit
B52.06 Extra over item 52.03(c) for cutting (m³)	cubic metre

mattresses to suit

The unit of measurement shall be the cubic metre of the rock-filled cages and the quantity shall be calculated from the dimensions of the gabions indicated on the drawings or prescribed by the Employer's Agent, irrespective of any deformation or bulging of the completed gabions.

The tendered rate shall include full compensation for all costs associated with cutting gabion mattresses to the required shape and the rejoined pieces to form sound cages."

Item	Unit
B52.07 Backfilling behind gabion retaining wall	cubic metre (m³)

The unit of measurement shall be the cubic metre and shall be computed as the product of the height of the wall and the area between the back face of the wall and a vertical line one and one half metres (1,5 m) behind the heel of the wall as shown on the drawings.

The tendered rate shall be extra-over that for item 33.01 and shall include full compensation for all additional costs involved in protecting the walls, use of light compaction equipment and any other precautions necessary for the completion of the work and work in confined space.

Item	Unit
B52.08 Polyethylene sheeting 0,75 mm thick	square metre (m²)

The provisions of payitem 21.09 shall apply mutatis mutandis.

SECTION 5600: ROAD SIGNS

B5601 SCOPE

Replace "South African Road Traffic Signs Manual" in the second paragraph with:

"SADC Road Traffic Signs Manual"

B5602 MATERIALS**(a) Structural steel**

Substitute "Where specified, all structural steel" in the second paragraph with "All structural steel".

(c) Steel plate and steel profiles**i) Steel plate**

Substitute "1,40 mm" in the first paragraph with "1,20 mm".

(e) Aluminium

Substitute "2,0 mm" in the last paragraph with "1,6 mm".

(g) Retro-reflective material

Add the following:

"The retro-reflective material shall conform to a Class III material with a 7 year warranty grade."

B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS**(a) Road signboards**

Add the following:

"The Contractor shall make every effort to ensure that signboards are correct in all respect and before dispatching the boards from the manufacturer's factory shall provide the Employer's Agent with a 100mm x 150mm colour photograph of each sign face for approval of the correctness of the legend. Such approval will not imply final acceptance of the board. If the Contractor is in any doubt as to the correctness of the sign detail, the sign designer shall be contacted for verification."

(ii) Steel profile road signboards

Add the following:

"Chromadek section shall be assembled in accordance with the details of Standard Plans ECS/56/1/C1"

Sheets 1 to 8.

Where the letter or legends cross the horizontal joints of the sign panels, the letter shall be cut on the joint and both ends folded around the radius.

Retro-reflective material to adjoining Chromadek panels on a sign shall be practical visual match of the specified colour."

(f) Road sign supports

Delete this Sub-clause and replace with the following:

'Supports for large ground mounted signs (sign area > 2 m²) shall be constructed in accordance with the details shown on the drawings. Where the details provided do not suit the framework and attachment details of the road sign boards proposed for use, the Contractor shall design new supports and submit the details to the

Employer's Agent for approval before manufacture. Some small ground mounted signs (sign area < 2 m²) shall be constructed in accordance with the details shown on the drawings."

B5604 ROAD SIGN FACES AND PAINTING

(a) Colours, symbols and legends

Add the following paragraphs to this Sub-clause:

"All reflective signs shall be solid colours and not silk screened. Non-reflective borders, diagonals, letters and legends on non-reflective signs shall be made of cast vinyl material with a seven year durability. Colour impregnated reflective material shall be used and applied according to the requirements of the sheeting manufacturer.

All symbols, letters and numerals shall be applied with a single piece of material. All borders shall be restricted as follows:

- Round signs - not more than four pieces
- Octagonal signs - not more than eight pieces
- Triangular signs - not more than three pieces

Diagonals and all other sign components shall be restricted to the minimum number of pieces required. Overlap between adjacent pieces shall be a minimum of 10 mm."

Add the following Sub-clause:

“(e) Application of retro-reflective material

All sign faces shall be faced with retro-reflective material. Painted front sign faces shall not be used.

Where applied to Chromadek sections, retro-reflective material shall be applied as specified for aluminium section in Clause 5603(d) of the Standard Specification, and of Clause B5603(a)(ii) of this project Specification."

B5605 STORAGE AND HANDLING

Add the following:

"The following shall not be allowed on the sign face:

- Drilling of holes, except for the fastening of overlays
- Application of any form of adhesive
- Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro- reflective material
- Covering the sign face with an impermeable material that does not allow free circulation of air."

B5606 ERECTING ROAD SIGNS

(b) Excavation and backfilling

In the first sentence of the first paragraph after "shown on the drawings" insert "or as directed by the Employer's Agent".

Add the following:

"A 50 mm thick permeable drainage layer shall be placed below concrete or soil-cement backfill for timber posts. No additional payment will be made and the cost thereof shall be deemed to be included in the tendered rates"

(c) Erection

Add the following:

"After erection the signboard shall be thoroughly cleaned with a cleaning agent approved by the retro-reflective material's manufacturer.

All vegetation obstructing the new or replaced sign board shall be removed and disposed of as instructed by the Employer's Agent."

B5608 DISMANTLING, STORING AND RE-ERECTING EXISTING ROAD SIGNS

Add the following:

"Existing overhead and ground mounted road signs that are being replaced by new signs shall be dismantled and disposed of by the Contractor. Where possible the dismantling of the signs shall not be before the replacement sign is erected and displayed. Where dismantling of the sign is required before erection of the replacement sign, the dismantling shall not take place until immediately before work is to commence on the replacement, and the replacement shall be completed and the new sign displayed as soon as possible thereafter (within 72 hours).

Dismantling shall include sign panels and ground mounted sign supports.

Ground mounted sign supports shall be cut off just below ground level. Material excavated for removal of buried poles shall be replaced, and any depression made good using excess material from excavation for new signs.

Payment items are provided in the Bill of Quantities. Payment will differentiate between different types of sign panels."

B5609 MEASUREMENT AND PAYMENT

Item	Unit
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B56.01 Road sign boards with painted or coloured semi-matt background. Symbols, lettering, and borders in semi-matt black or in Class I retro-reflective material, where the sign board is constructed from:

Amend the last two lines of the second paragraph to read:

“completion, delivery, installation of the road sign board complete as specified, and the removal and disposal of all vegetation obstructing the motorists’ view of the new or replaced sign board.”

(c) Prepainted galvanized steel plate (Chromadek 1.2 mm thick or approved equivalent)

Add the following sub-sub-item to this sub item:

"(iv) Signs measured by number (state type and dimensions)..... number (No)"

Add the following to this item:

"The unit of measurement for item B56.01(c)(iv) shall be the number of signs supplied and erected. Where signs are measured by number, item 56.02 shall not be applicable."

Amend the last two lines of the second paragraph of this item (56.01) to read:

“completion, delivery, installation of the road sign board complete as specified, and the removal and disposal of all vegetation obstructing the motorists’ view of the new or replaced sign board.”

Item	Unit
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B56.04 Marker signs

(a) Kilometre posts as per Drawing ECS/56/2/C1number (No)

(b) Distance number plates as per Drawing ECS/56/C2number (No)

The tendered rate shall cover full compensation for taking delivery of the marker signs and kilometre posts and their installation as shown on the drawings.

Item	Unit
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B56.05 Excavation and backfilling for road sign supports (not applicable to kilometre posts)

Substitute "not in concrete" in the first paragraph with "not in concrete or a soil/cement mixture".

Add the following payment items:

Item**Unit****B56.10 Danger plates at culverts/structures (W401 & W402, 300 mm x 1200 mm)..... number (No)**

The unit of measurement shall be the number of danger plates provided and erected in accordance with the drawings.

The tendered rate shall include full compensation for all labour and material, painting, posts, excavation, backfilling with soil etc., as may be necessary for completing the work in accordance with the details shown on the drawings.”

SECTION 8100: TESTING MATERIALS AND WORKMANSHIP

B8102 TESTING METHODS

Insert the following as a new first paragraph:

“Where reference is made to TMH test methods in this specification or the standard specifications, it shall be replaced with the relevant current published SANS test method.”

B8103 THE COST OF TESTING**(a) Process control**

*Rename the heading as “**Materials Quality Control**” and replace the contents with the following:*

“Testing shall be undertaken by a combined laboratory facility for process control (where the process control testing can be utilised as acceptance control), acceptance control and correlation testing subject to the following requirements laid down by the Employer:

- (i) The Contractor accepts the test results of the combined laboratory. Should there be any doubts with regard to certain test results, this will be settled by an independent laboratory mutually agreed upon. The cost in such cases will be to the account of the party at fault. The Contractor shall apply in writing, quoting this clause, as to which specific tests are in doubt, providing test reference numbers and details as to the reasons why the test result is in doubt.
- (ii) The Contractor accepts that the Employer’s Agent will be in charge of the combined laboratory.
- (iii) The Contractor accepts the test results of the combined laboratory. Should there be any doubts with regard to certain test results, this will be settled by an independent laboratory mutually agreed upon. The cost in such cases will be to the account of the party at fault.
- (iv) The Contractor will be allowed to place a permanent representative in the combined laboratory to observe the laboratory operations. The cost of such representation cannot be claimed as a payment contribution, but will be for the account of the Contractor. The Contractor shall indicate in writing within 14 days of the commencement date if such representation will be required or declined.

The total cost of the combined laboratory for the **9-month** contract period has been estimated at **R 1,400,000.00**. For the combined laboratory, the Contractor will be required to contribute 50% of the costs of the laboratory. On this basis, the 50% portion would amount to R700,000.00.

A pay item for the Employer’s contribution for the combined laboratory has been provided under payment item B81.04. This represents the Employers 50% contribution towards the combined laboratory.

The Contractor’s 50% financial contribution towards the combined laboratory will be deducted monthly from the monthly cost of the combined laboratory. The monthly cost of the combined laboratory will be split 50/50 between the Employer and the Contractor. Should the final total contribution by the Contractor to the cost of the joint laboratory exceed R1,400,000.00, the excess amount will be added to the amount payable under the Contract. Similarly, should the final

Contractor's contribution be less than R1,400,000.00 the difference shall be deducted from the amount due under the Contract.

The Employer will not be prepared to consider claims for delays to the Works resulting from the awaiting of test results or approval of designs submitted. It is in the Contractor's interest to submit samples for design approvals as early as possible in order to expedite any design approvals required. Testing will be effected as promptly as possible but it is in the Contractor's own interest to submit material samples, concrete cubes, other components required for testing or requests for approval of fill or layer in good time in order to assist in avoiding or reducing delays."

Add the following at the end of this clause:

"The Employer's Agent shall for the purpose of acceptance control and products on workmanship, assess test results and measurements in accordance with the provisions of the standard specifications (Scheme 2). Where small quantities of work are involved, a lot shall mean a full day's production for a specific item of work subject to acceptance control testing."

B8105 TESTING THE AGGREGATES

Add the following Sub-clause:

"(g) Determination of Ethylene Glycol Durability Index

The Ethylene Glycol Durability Index shall be determined as follows:

(i) Apparatus

Suitable pans or basins
Ethylene Glycol solution
Stirring rod

(ii) Method

Obtain three or more representative samples from the source to be evaluated.

If not already crushed, crush the material in order to obtain sufficient minus 19mm plus 13mm sized aggregate in order to totally cover the bottom of the basin or pan with a single layer of stone. Add sufficient ethylene glycol to each basin ensuring that every aggregate particle is completely submerged.

After soaking for 24 hours, gently stir the aggregate, allow to settle and observe and record the response of the aggregate to the ethylene glycol according to the criteria listed in (iii) below. Continue the above cycle at intervals of 24 hours for a further 4 days, in each case recording the observed response. After 5 days allow the samples to remain submerged in the solution and observe and record the disintegration response after a total period of 15, 30 and 60 days has elapsed.

(iii) Classification of response

After each cycle, classify and record the response of the aggregate as follows:

DISINTEGRATION CLASS

Class 1	:	No obvious effects, or only very minor spalling of sand particles or very small flakes.
Class 2	:	Splitting of rock, accompanied by any other disintegrative effects.
Class 3	:	Fracturing (spheroidal and / or internal) without extensive spalling or distortion.
Class 4	:	Fracturing (spheroidal and / or internal) with extensive spalling or distortion.
Class 5	:	Complete disintegration.

TIME CLASS

The time factor in the above disintegrative process is classified according to the time taken for the most serious effect of the expansive stresses to occur i.e.

Class 4	:	0 - 5 days
Class 3	:	6 - 15 days
Class 2	:	16 - 30 days
Class 1	:	31 - 60 days
Class 0	:	Over 60 days

(iv) Determination of Glycol Durability Index

The Ethylene Durability Index is determined by adding the class number as assigned for the specific disintegrative response observed to the class number as assigned for the period for this response to occur. A durability index ranging from 1 (no response) to 9 (rapid and complete disintegration) is thus determined."

Amend the heading of B8106 to read as follows:

B8110 TESTS RELATING TO CHEMICAL STABILISATION

Add the following sub-clause:

"d) The Wet-Dry Durability Test for cement and/or lime-treated materials using the hand- brush method (SANRAL METHOD)

1. Scope

This method covers the procedure for determining the soil-cement losses obtained by repeated wetting, drying and hand brushing of hardened soil-cement specimens (see 5.4).

2. Apparatus

2.1 A moisture curing room capable of maintaining a relative humidity of 95 to 100 percent and a temperature of 22 to 25°C, or suitable plastic bags capable of holding specimens and carriers in an air tight condition in a water bath as described in 2.2 below.

- 2.2 A suitable water bath with thermostatic control capable of maintaining a temperature of 22 to 25°C.
- 2.3 A balance to weigh up to 10kg, accurate to 0.5g.
- 2.4 A drying oven capable of maintaining temperatures of $71 \pm 3^\circ\text{C}$ and $110 \pm 5^\circ\text{C}$.
- 2.5 A wire scratch brush made of 50mm by 1.6mm flat 26 gauge wire bristles assembled in 50 groups of 10 bristles and mounted to form five longitudinal rows and 10 transverse rows on a 200 by 65mm wooden block.

3. Method

3.1 *Preparation of specimens*

Prepare specimens in accordance with the procedure described in the Appendix to method A19 in the TMH 1 with the following exceptions:

Use the material passing the 37.5mm sieve and discard the material remaining on the sieve.

Use the apparatus and compaction method as described in SANS 3001-GR30 (replacing TMH 1 method A7) (100% Modified AASHTO at predetermined OMC).

3.2 *Curing of specimens*

Rapid cure the specimens (see 5.6). Alternatively, and where instructed by the Employer's Agent, the specimens may be cured for seven days at a relative humidity of 95% to 100% and a temperature of 22°C to 25°C in a suitable curing room or in plastic bags and a suitable water bath.

3.3 *Wetting, drying and brushing*

After curing, remove the specimens from the curing room or plastic bags, allow to cool and submerge them in water at room temperature for a period of five hours. Remove the specimens from the water and place them in an oven at 71°C for 42 hours.

Remove the specimens from the oven. Give each specimen two firm strokes over the full surface area with the wire scratch brush. The brush must be held parallel to the long axis of the specimen or parallel to the ends as required to cover all areas of the specimen. Apply these strokes to the full height and width of each specimen with a firm stroke corresponding to approximately 13.5 kN force (see note 5.5).

3.4 *Determination of soil-cement losses*

After 12 cycles, dry the specimens to constant mass at 100°C and determine the oven dry mass of the specimens. The data collected will permit the calculation of the soil-cement losses of the specimens after the prescribed 12- cycle test.

4. Calculations

- 4.1 Calculate the soil-cement loss of the specimens as a percentage of the original oven-dry mass of the specimens as follows:

$$L = \frac{W - N}{W} \times 100$$

W

Where

L = soil-cement loss (%)

W = original calculated oven-dry mass (g) (calculated according to paragraph 3.5 in the Appendix to method A19 in the TMH 1).

N = final oven-dry mass (g).

- 4.2 The percentage loss shall be calculated and reported to the nearest 0.1 percent. The results are normally required for stabilisation design purposes and should be reported graphically against relevant cement contents.

5. Notes

- 5.1 Mass determinations of the specimens before and after brushing are usually made at the end of each cycle during research or special investigations.
- 5.2 Care is required when assessing results obtained on very coarse graded materials as "plucking" out of the aggregate pieces during the brushing process could result in very high losses of material, which may however not be truly indicative of its potential erosion resistance.
- 5.3 If it not possible to run the cycle continuously because of Sundays or holidays, or for any other reason, the specimens should be held in the oven during the layover period.
- 5.4 The test was originally developed to determine wet-dry durability of cement- treated material. It can, however, be used with equal success on material tested with other chemical stabilizers, for example lime, or mixes of lime and milled blast furnace slag, or cement and milled blast furnace slag.
- 5.5 The pressure of the brushing stroke is determined as follows:

Clamp a specimen in a vertical position on the edge of a platform scale and zero the scale. Apply vertical brushing strokes to the specimen and note the force necessary to register approximately 1.36kg.

- 5.6 Rapid curing:

Seal each specimen airtight in a suitable container or plastic bag. Carefully place the briquettes on suitable holders or in pans and place in the oven at the relevant temperature and period given below:	Temp (°C)	Time (Hours)
Stabilizing agent		
Cement	70 – 75	24 ±0.5
PBFC	70 - 75	24 ±0.5
Lime	60 ±2	45 ±1
Lime / FA	60 ±2	45 ±1
Lime / MBFS	60 ±2	45 ±1

B8114 GEOTEXTILE AND GEOTEXTILE – SOIL COMPACTIBILITY TESTS

Add the following new sub-clause:

“c) Other Tests:

i. Thickness (mm):

The thickness of the material shall be specified by the Contractor (or supplier).

Thickness and compressibility tests shall be carried out in accordance with Code of Practice SABS 0221:1988. The Testing of Geo-textile, to check that the material supplied conforms to the thickness specified by the Contractor.

ii. Mass per unit area (g/m^2):

Testing shall be carried out in accordance with Code of Practice SABS 0221.

iii. Tensile strength (kN/m):

Testing shall be carried out in accordance with Code of Practice SABS 0221.

iv. Penetration load (kN):

Testing shall be carried out in accordance with Code of Practice SABS 0221.

v. Puncture resistance (mm):

Testing shall be done in accordance with test procedures laid down by CSIR, Pretoria.

vi. Permeability (l/s/m^2):

Testing shall be carried out in accordance with Code of Practice SABS 0221.”

B8117 MEASUREMENT AND PAYMENT

Item

Unit

"B81.04 Employer's contribution for the combined laboratory Prov Sum

The provisional sum provided is for the Employer's contribution of the laboratory and shall be expended in accordance with the provisions of the General Conditions of Contract.

The provisional sum shall cover the Employer's contribution towards the establishment and operation of the combined laboratory over the contract period including any approved extension of time, and shall be deducted from the Contractor's payment certificates."

*Insert "(a) & (b)" after "81.03" in the 1st line of the 2nd paragraph of the **Note***

SECTION 8200: QUALITY CONTROL (SCHEME 1)

B8201 SCOPE

Add the following paragraph:

“Quality Control Scheme 1 as specified in Section 8200 shall apply to this Contract.”

B8204 GENERAL REQUIREMENTS

(d) Outliers

- (ii) Method 2, shall apply to this Contract using the critical values for the different value of n from the following added tables for the different product properties.

Table B8204 (d) / 3

Critical C-values for the outlier test for granular material (C _{0,99(N)} – sigma values)									
N	For % Compaction	Sieve Size (only for G1 & G2 base), mm							PI
		26.5	19.0	13.2	4.75	2.00	0.425	0.075	
4	4.1	6.1	8.5	8.5	7.3	5.6	3.6	3.2	2.4
5	4.4	6.4	9.0	9.0	7.7	5.9	3.9	3.3	2.5
6	4.6	6.7	9.4	9.4	8.0	6.2	4.0	3.5	2.7
7	4.7	6.9	9.7	9.7	8.3	6.3	4.1	3.6	2.8
8	4.8	7.1	9.9	9.9	8.5	6.5	4.2	3.7	2.8
9	4.9	7.2	10.1	10.1	8.6	6.6	4.3	3.7	2.9
≥10	4.9	7.3	10.2	10.2	8.7	6.7	4.4	3.8	2.9

Table B8204 (d) / 4

Critical C-values for the outlier test for asphalt layers (C _{0,99(N)} – sigma values)										
N	Density	Sieve Size, mm							Bitumen Content	VIM
		26.5	19.0	13.2	4.75	2.36	0.300	0.075		
3	2.9	5.6	6.7	7.6	7.8	7.2	6.2	2.3	0.4	2.1
4	3.2	6.1	7.3	8.6	8.5	7.9	6.8	2.5	0.4	2.3
5	3.3	6.4	7.7	9.0	9.0	8.4	7.2	2.6	0.5	2.4
6	3.5	6.7	8.0	9.4	9.4	8.7	7.5	2.7	0.5	2.5
7	3.6	6.9	8.3	9.7	9.7	9.0	7.7	2.8	0.5	2.6
8	3.7	7.1	8.5	9.9	9.9	9.2	7.9	2.9	0.5	2.7
9	3.7	7.2	8.8	10.1	10.1	9.4	8.1	3.0	0.5	2.7
≥10	3.8	7.3	8.7	10.2	10.2	9.4	8.1	3.0	0.5	2.8

Table B8204 (d) / 4

Critical C-values for the outlier test for surfacing aggregate (C_{0,99(N)} – sigma values)									
N	Sieve Size, mm								
	26.5	19.0	13.2	9.5	6.7	4.75	2.36	0.425	0.075
3	2.1	2.0	2.0	1.8	2.4	1.8	2.3	1.8	0.9
4	2.3	2.2	2.2	2.0	3.2	2.0	2.5	2.0	1.0
5	2.4	2.3	2.3	2.1	4.0	2.1	2.6	2.1	1.1
6	2.5	2.4	2.4	2.2	4.6	2.2	2.7	2.2	1.1
7	2.6	2.5	2.5	2.2	5.6	2.2	2.8	2.2	1.2
8	2.7	2.6	2.5	2.3	6.4	2.3	2.9	2.3	1.2
9	2.7	2.6	2.5	2.3	7.2	2.3	2.9	2.3	1.2
≥10	2.7	2.6	2.5	2.3	8.0	2.3	3.0	2.3	1.2

Table B8204 (d) / 5

Critical C-values for the outlier test for cemented layers (C_{0,99(N)} – sigma values)					
N	Compaction %	UCS		PI	CBR
		Lime	Cement		
3	4,4	1,1	1,6	3,3	22
4	4,9	1,2	1,7	3,6	24
5	5,1	1,3	1,8	3,9	26
6	5,4	1,3	1,9	4,0	27
7	5,5	1,4	1,9	4,1	28
8	5,7	1,4	2,0	4,2	28
9	5,8	1,4	2,0	4,3	29
≥10	5,8	1,5	2,0	4,4	29

B8206 JUDGEMENT PLAN B

Replace Table 8206/1 with the following table in controlling the characteristic properties in accordance with this judgement scheme.

Table B8206/1

Structure	Characteristics, Properties
Gravel pavement layers	Relative compaction
Crushed-stone base or subbase	Relative compaction
Asphalt base and surfacing	Relative compaction Binder content of mix Voids in mix (VIM) Grading

Chemically stabilised layers	Relative compaction agent content by UCS determinations Unconfined Strength	Stabiliser Compressive
Concrete	Compressive Strength	

(a) Taking samples and testing the properties.

Add the following to the first paragraph:

“A valid concrete compressive strength test result, the sample size (n), is the average of 3 test specimens (concrete cubes) from a single batch of concrete tested at the same age.”

(d) Determining the judgement limits

Values of constants

Replace Table 8206/3 with the following table (table B8206/3):

Table B8206/3: VALUES OF CONSTANTS n, LS, LS AND Ø

Material	Properties	Minimum Sample Size n	Ls (Lower Specification limit)	Ls (Upper Specification limit)	Ø
Selected Subgrade	Relative compaction	6	Top 95% Bottom 93% Sand 100%	-	15
Subbase	Relative compaction	6	97%	-	15
Gravel base	Relative compaction	6	100% and if stabilised 98%	-	15
Crushed Stone Subbase or base	Relative compaction	6	See sub-clause 3602 (a)		15
	Grading		See table 3602/4		20 sieves 26,5-4,75 10 sieves 4,75-0,075
Asphalt base or surfacing	Relative compaction Binder content Voids in mix (VIM)	6	See note 1		15
	Gradings		See table 4213/1		20 sieves 26,5-13,2 10 sieves 13,2-0,075

Chemically stabilised layers	Relative compaction	6	Upper/Single layer 96% Lower Layer 95%	15
	Cementitious binder content by UCS determinations		See sub-clause 3506 (b)(ii)	-
	Unconfined Compressive Strength		See table 3402/5*	
Strength concrete (structural)	Compressive strength (28 days)	See tale 8206/2	See note 3	5
Pavement concrete	Compressive strength (28 days)	6	See sub-clause 7103(d)	5

*In table 3402/5 change the material before treatment to read at least G5 qualify for C3 and C4 criteria. Notes (Table B8206/3)

(1) Asphalt base or surfacing: Specification limits for-

(c) **Voids**

Delete and replace the contents of this subitem with the following: "Ls

= specified values -1,0% points

L's = specified values +1,0% points"

B8208 CONDITIONAL ACCEPTANCE

Amend the first paragraph to read:

"Any lot which does not comply with the requirements for acceptance plan B may be conditionally accepted should the value of the sample mean lie within the rejection limits given in Clause 8211."

Add the following to the first paragraph:

"The rejection limits for this contract shall be determined in accordance with the requirements of Clause 8211: Determination of Rejection Limits in accordance with statistical criteria."

B8209 PROCESS CONTROL BY THE CONTRACTOR

Add the following to the first paragraph:

"As part of his quality control system, the Contractor shall carry out the minimum number of testing as stated in Table 8209/1 and submit the results to the Employer's Agent when completing the Employer's Agent's form: Request for approval of Work. The stated requirements may be replaced by alternative proven and approved requirements in the event of a manufacturing plant being accredited in terms of SABS 0157."

B8210 ROUTINE TESTS AND INSPECTION BY THE EMPLOYER'S AGENT

Amend the last sentence of the first paragraph to read: "The testing frequencies and sample and lot sizes for quality control testing shall be in accordance with Table: 8210/1".

Table B8210/1

Pavement Layer	Properties to be tested	Sample per Lot size
Roadbed and Fill (upper 150mm)	Relative compaction Grading Atterberg Limits MDD/OMC CBR	} >6 depending on lot size see form S-LAY-TPG2-E 4 or 6 first lot (trial section) and thereafter 1 per lot for sequential testing 1
Upper and Lower Selected Layers	Relative Compaction Grading Atterberg Limits MDD/OMC CBR	} >6 depending on lot size see form S-LAY-TPG2-E 4 or 6 first lot (trial section) and thereafter 1 per lot for sequential testing 1
Granular Subbase	Relative Compaction Grading Atterberg Limits MDD/OMC	} >6 depending on lot size see form S-LAY-TPG2-E 4 or 6 first lot (trial section) and thereafter 1 per lot for

	CBR	sequential testing 1
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Table 8210/1 (cont)

Pavement Layer	Properties to be tested	Sample per Lot size
Cemented Subbase Before Treatment	Grading Atterberg Limits	>6 depending on lot size see form S-LAY-TPG2-E
After treatment	MDD/OMC CBR Relative Compaction UCS	4 or 6 first lot (trial section) and thereafter 1 per lot for sequential testing 1 >6 depending on lot size see form S-LAY-TPG2-E
Granular Base	Relative Compaction Grading Atterberg Limits BRD/OMC Flakiness Fractured Faces or Elongation	>6 depending on lot size see form S-LAY-TPG2-E 4 or 6 first lot (trial section) and thereafter 1 per lot for sequential testing 1 1 (If alluvial ie round pebbles)
Asphalt Base and Surfacing	Relative Compaction Binder Content Grading VIM MTRD (Rice density) BRD Stability and Flow	>6 depending on the lot size
Surfacing Seals	Grading Dust and Fines Content Flakiness ALD Durability Tests (i) ACV and/or (ii) 10% Fact Wet & Dry	>5 per delivery per stockpile and thereafter random during construction of the seal. 1

Note:

- (1) A minimum of 4 tests per lot can be allowed for unforeseen circumstances but shall be at the Employer's Agents discretion.
- (2) Confined areas (lots) due to their size and nature are normally subjected to lesser testing than that which is prescribed, which can be allowed for as long as the quality of the material tested can be established for acceptance control purposes.

Delete the existing 2 paragraphs and replace with:

"The Contractor shall be responsible for acceptance control testing of the work carried out under the Contract as specified

which is the normal Client required acceptance control testing which will be carried out by a previously defined joint laboratory between Contractor and professional Engineering design and supervision team. For sections of the works where hand compaction methods are used (as opposed to machine compaction) then additional control and acceptance testing will be required. On-site determination of variability using a field pilot study will be required. This additional testing would be for the Contractor's account.

The Employer's Agent's Representative shall have access to all process and acceptance control test results. He may order additional acceptance control testing through the Contractor's site laboratory or an accredited approval external testing laboratory to satisfy himself that the required quality standards are being met.

B8211 DETERMINING REJECTION LIMITS IN ACCORDANCE WITH STATISTICAL CRITERIA

The rejection limits shall be determined in accordance with the requirements of clause 8211."

PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS FOR ROAD CONSTRUCTION
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C1. INTRODUCTION

C1.1 LIST OF ABBREVIATIONS

BoQ	Bill of Quantities
CHSA	Construction Health and Safety Agent
CHSO	Construction Health and Safety Officer
CR	Construction Regulations 2014 as amended
DME	Department of Mineral and Energy
DMR	Department of Mineral Resources
DoL	Department of Labour
DSTI's	Daily Safe Task Instructions
EA	Employers Agent
EAR	Employers Agents Representative
EEA	Employers Environmental Agent
FEMA	Federated Employers Mutual Association
HIRA	Hazard Identification Risk Assessment
MH&SA	Mine Health and Safety Act No. 29 of 1996 (as amended) OHS
	Occupational Health and Safety
OHSA	Occupational Health and Safety Act No. 85 of 1993 (as amended)
PSHSS	Project Specific Health and Safety Specification
PC	Principal Contractor
PPC	Personal Protective Clothing
PPE	Personal Protective Equipment
SANS	South African National Standards (Authority)
SMME	Small, Micro, Medium Enterprise
SoP's	Safe Operating Procedures
SWP	Safe Work Procedure
TMS	Technical Method Statement
WCC	Workman's Compensation Commissioner

C1.2 DEFINITIONS

The definitions used will be those set out in the Regulation Gazette No 37305 of 7th February 2014 with the following additions or amendments;

KSD-LM King Sabata Dalindyebo Local Municipality.

Employers Agent: Means a competent person appointed by the Client to design, supervise and monitor construction on their behalf.

Hazard Identification and Risk Assessment (HIRA) and Risk Control:

Means a documented plan, which identifies hazards, assesses the risks and details the control measures and safe working procedures which are to be used to mitigate and control the occurrence of hazards and risks during construction or operational phases.

Induction Training: Means once off introductory training on general health and safety issues given to all

employees and visitors to the site before commencement of work on site.

Mine: Any excavation from which material (soil, gravel, stone etc.) is taken for use on the construction site.

Site: Means the area in the possession of the Principal Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas and haul roads which are reasonably required for the activities for the Principal Contractor, and approved for such use by the Employer's Agent.

The Act: Means, unless the context indicates otherwise, the Occupational Health and Safety Act, No. 85 of 1993 and Regulations promulgated thereunder, as amended.

C1.3 KEY ROLE-PLAYERS

Client	KSD-LM represented by the Head of Department and/or such other person or persons, authorised thereto in writing.
Designer / Employer's Agent	Ntusi Group acting through a Director, an Associate or an official authorised thereto in writing.
CH&S Agent	To be confirmed at a later stage
Principal Contractor	A Contractor appointed by the Client in terms of the Contract (Form of Offer and Acceptance).
Contractor	A Contractor appointed by the Principal Contractor in terms of the requirements of the Contract.

C1.4 KEY REFERENCES

Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended) Mine Health and Safety Act and Regulations No. 29 of 1996 (as amended) Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)
 Committee of Land Transport Officials (COLTO) South African Roads Specifications for Road and Bridge Construction South African National Standards
 General Conditions of Contract 2015 (GCC)
 Traffic Safety Manual (SARTSM) Chapter 13, Volume 2 of 1999 Road
 Traffic Act No. 93 of 1996 (as amended)

C2 PURPOSE OF THIS PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATION (PSHSS)

This PSHSS highlights the aspects to be implemented over and above the minimum requirements of current legislation. Requirements may be changed should new risks or issues be identified that could not have been foreseen during the design phase of the project.

C2.1 PREAMBLE

The KSD-LM is tasked to provide infrastructure within the town and surrounds of KSD-LM including the construction of roads and civil

structures.

Each year fatalities and serious injuries mar the reputation of the Construction Industry. The KSD-LM has a responsibility to limit such injuries by ensuring a zero tolerance approach to Contractors and those affiliated to a particular project. Thus a high premium is placed on the Health and Safety KSD-LM stakeholders, which include its employees, professional service providers, public and its physical assets. The responsibilities that the KSD-LM and relevant stakeholders have toward its employees are captured in this document. The responsibilities stem from both moral, civil and a variety of legal obligations.

The Principal Contractor is to take due cognisance of the above statement.

This PSHSS is a performance specification to ensure that the KSD-LM and any bodies that enter into formal agreements with the PSJ-LM, i.e. Employer's Agents, Principal Contractors (PC) and Contractors, achieve an acceptable level of OHS compliance.

No advice, approval of any document required by this PSHSS (i.e. hazard identification and risk assessment, action plans) or any other form of communication from the Client shall be construed as an acceptance by the Client. Nor shall such communication relieve or absolve the PC from any obligation or from achieving compliance with legal requirements. The PC remains responsible for achieving the required performance levels.

C3. IMPLEMENTATION OF THE PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATION (PSHSS)
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This PSHSS forms an integral part of the Contract, and the tenderer is required to make it an integral part of their Contracts with Contractors and Suppliers. A PSHSS is to be available for each level of Contract and Contractor, and must be complied with.

This PSHSS must be read in conjunction with the OHSA, it's Regulations (as amended) and any other standards relating to work being done, and ensure compliance thereto. The information relative to the scope of the project, the works etc. is detailed in the tender document, and is to be taken into account when developing the H&S Plan and associated documentation.

The baseline design risk assessment is included, as is a summary of risks identified.

Should there be design changes, or change in the scope of works, an amended PSHSS may be issued. Where amended PSHSSs are issued, the PC will be required to ensure a resubmission of an amended H&S Plan for approval. Further to this, the PC must ensure that a similar system must be implemented between all their Contractors.

The CHSA will visit the project at least monthly, or more frequently if deemed necessary to ensure compliance. All activities on the site and all appropriate documentation will be monitored and reported on to the Client, Employer's Agent and Contractor. Non-conformances will be issued and penalties or work stoppage instructions will be issued where appropriate.

Communication between the CHSA and the PC will be through the Employers Agent. The following documents,

- 1. APPLICATION FOR A PERMIT TO DO CONSTRUCTION WORK 'ANNEXURE 1',**
- 2. NOTIFICATION OF CONSTRUCTION WORK 'ANNEXURE 2',**
- 3. MANDATORY AGREEMENT 'SECTION 37.2'**
- 4. DECLARATION – FULFILMENT OF THE CONSTRUCTION REGULATIONS 7TH FEBRUARY 2014**
- 5. OHS BoQ,**

Can be found in the Tender Document and is to be completed by the tenderer where applicable. These documents shall be deemed to form part of the returnable Contract Documents.

C4. REQUIREMENTS AT TENDER STAGE

Adequate pricing for Occupational Health and Safety is required, and the appropriate section in the BoQ is to be completed.

C4.1 PRE-START UP ACTIVITIES

The successful tenderer must provide a Project Specific Health and Safety Plan within 14 days of the award of the tender.

Further TMS are to be submitted prior to, and during the project which will require the approval of the ER before work on that aspect or activity may commence.

The PC shall ensure that the following information is submitted as part of the H&S Plan

1. Appointment Letter from the Client
2. Mandatory Agreement (Sect. 37.2)
3. Construction Manager's Curriculum Vitae
4. Construction Health and Safety Officer's Curriculum Vitae
5. Construction Traffic Safety Officer's Curriculum Vitae
6. OHS Policy
7. Quality Policy
8. Environmental Policy
9. Waste Management Plan
10. HIV AIDS Policy
11. Alcohol / Drug Policy
12. Registration with Workman's Compensation or any other
13. Site Specific Organogram
14. Technical TMS for the first three (3) months planned project works
15. Signed Appointment Letters and CV's for the following Site Personnel
 - a) CEO or Responsible Person – 16.1 and 16.2
 - b) Construction Manager CR8.1
 - c) Assistant Construction Manager CR8.2
 - d) Construction Health and Safety Officer CR8.5
 - e) Construction Traffic Safety Officer
 - f) Construction Supervisor CR8.7
 - g) Risk Assessor CR9
 - h) Incident Investigator GAR9
 - i) First Aider GSR3.4
16. A Site Plan indicating the following;
 - a) Positions of emergency assembly points and equipment at the site camp, or each fixed working area;
 - b) Traffic routes for plant and pedestrians as well as parking areas; Storage areas (flammable stores, materials etc.)

No work may commence until this H&S Plan has been approved and the necessary approval from the Department of Labour has been received by the Client.

Once the H&S Plan has been approved there may well be additional documentation that includes appointments, emergency arrangements or further Technical TMS and Risk Assessments. The inclusion of such aspects for Personnel or Contractors commencing work at this time is required to be approved and verified by the Employers Agent and CHSA.

C5 GENERAL REQUIREMENTS

The aspects covered in Sections 5.1.1 to 5.1.9 have been noted as risk areas in the design Hazard Identification and Risk Assessment (HIRA), and are to be noted when developing the H&S plan and associated documentation. The COLTO Standard Specification (among other) documents was used to develop the HIRA, and the same reference format is used. Where particular risks are noted, further requirements may be specified. Identification of low or medium risks does not mean there is no risk involved. In depth HIRA's and management systems are required to limit as much risk as possible as required in the OHSA.

Requirements for H&S systems, Standards, PPE, PPC etc. are noted (but are not limited to), and the management thereof should be included in the documentation.

Technical TMS are to be developed for all key activities as they relate to the programme and approved by the EAR. HIRA are to be developed using the approved TMS. TMS are to incorporate the following information: Plant, Equipment, Labour requirements, Method of working, Risk Assessment, PPE / PPC, Environmental aspects and the duration of each activity.

Technical TMS (TMS) and Safe Work Procedures (SWPs) or Safe Operating Procedures (SoPs) are to be used by key site staff for daily activities and Supervisors need to ensure the site, workers and the public are kept safe. The Environmental issues are to be included, but will need to be approved by the Environmental Consulting Officer (ECO).

C5.1 Summary of Risks Identified During Design

C5.1.1 General Requirements and Provisions (Series 1000)

Information in this series cover the start-up aspects of the project, with a number of the activities (excluding establishment) lasting the duration of the contract.

Overhead and underground services exist on the project. The Principal Contractor will be responsible to identify these services and notify the responsible authorities who would be responsible for the re-location of the identified services if required by the PC

It is unknown if potable water is available in all areas along the construction site. Therefore the Contractor will be responsible to ensure that there is potable water available at all times for all persons on site. Rivers are to be treated as contaminated.

Traffic accommodation will be required through the entire project such as, traffic on half widths, by-passes, temporary Stop / Go controls as well as access to public residential houses and businesses.

There are schools and clinics as well as livestock throughout the project.

5.1.2 Drainage (Series 2000)

Drainage structures will be required on the entire project. This will include excavations, formwork and support work. All Temporary Works must be designed and approved by a competent person, and managed by a competent supervisor. Many of these activities may require a high percentage of labour, and therefore ergonomic risks must be taken into consideration. Attention to the rotation of workers when conducting activities must be taken into consideration.

5.1.3 Earthworks and Pavement Layers of Gravel or Crushed Stone (Series 3000)

The existing road will be rebuilt with concrete paving blocks as well as realigned in different areas. The public are to be protected at all times from construction plant.

Management of dust, which may contain Silica, will be required. Photographic records are to be kept of all operations in these areas.

5.1.4 Asphalt Pavements and Seals (Series 4000) N/A

5.1.5 Ancillary Roadwork's (Series 5000)

Ancillary work will be completed by using mechanical as well as labour based activities.

The Contractor will be required to comply with the rotation of labour and ergonomic issues are required to be addressed during this phase of the project.

5.1.8 Sundries (Series 8000)

Testing of materials and workmanship

5.1.9 Specified Hazardous Chemical Substances

This is a list of products or type of substance that have been identified as likely to be used on the project are included in ANNEXURE A.

Where the PC is likely to supply the product as the product has not been specified, safer alternatives should be considered.

C6. COMMENCEMENT OF WORK

No work may be commenced or carried out before the Construction Work Permit and Number have been issued and assigned by the Provincial Director of the (DoL). The site specific number is not transferrable.

The Client or his/her appointed CHSA shall submit all the relevant documentation to the Provincial Director of the Department of Labour (DoL) once the OHS Plan has been approved, in the form of the Annexure 1 of the Construction Regulations-2014.

This shall occur after award of the contract, but before commencement of construction work. The application will not be submitted until the PC's OHS Plan has been approved by the Client/CHSA and the Annexure 1 – Application for a Permit to do Construction Work being correctly completed by the Client and the PC.

C7. HEALTH AND SAFETY PLAN FRAMEWORK

The aspects related to the project outlined in the previous sections are to be taken into account when drawing up the H&S Plan. The PC is required to demonstrate competence by providing a H&S Plan that will address the requirements of the project.

The current legislative requirements, SANS codes and any other standards that may guide practice are to be taken into consideration. The following aspects must be addressed in the H&S Plan, as they have been identified in the design HIRA, as playing a role in reducing the overall risk of a particular activity, or section of the project. The CHSA may from time to time request additions or systems to be implemented as they relate to the works at the time.

7.1 APPOINTMENT OF COMPETENT SITE PERSONNEL

The CEO (OHSA S16.1) of the PC will take overall responsibility for the appointment of competent site staff for the duration of the project. Should the CEO not be personally involved in the project, the H&S responsibilities are to be delegated to the Construction Manager (OHSA 16.2. and CR8.)

The construction team is to ensure that the CHSO is kept up to date with all planned activities, to ensure all H&S requirements are met.

All Construction/Technical Method Statements and Safe Work Procedures are to be generated by senior site personnel, and the appropriate Risk Assessments developed therefrom in conjunction with the CHSO.

The TMS and SWP are to be signed by the PC, CHSO and ER on site

The Occupational Health and Safety Plan shall include the following, but not be limited to the following key appointments:

7.1.1 Construction Manager (CR8.1)

7.1.2 Construction Health and Safety Officer (CR8.5)

The PC shall employ at least one competent, full-time CHSO for the duration of the contract.

If the Employer's Agent and CHSA agree due to the nature and size of the contract the number of competent, fulltime CHSO's may be increased, then the PC will be required to employ as requested.

The CHSO will report directly to the Construction Manager.

The CHSO's CV's and qualifications are to be submitted to the Employer's Agent and CHSA for approval.

Registration with SACPCMP as a Construction Health and Safety Officer is a compulsory requirement Additional qualifications shall include at least

- OHS Act and Regulations course
- Valid driver's license,
- Minimum of five (5) years exposure to Civil Engineering Construction (Roads) in an OHS capacity,

The PC is to ensure adequate resources are provided to all CHSO's in order to undertake all their responsibilities.

Resources

- Mobile phone,
- Camera with; Time, Date and GPS facilities
- Computer and internet access,
- Dash Camera for site video recording
- Dedicated Vehicle for each CHSO
- Any other equipment or facilities to enable him/her to carry out their duties effectively

In the case of a contract where Contractors are employed, the CHSO must have the competence to evaluate the Contractors Health and Safety Plans.

The CHSO may not hold any other position on the site staff.

The Construction Manager assisted by the CHSO will be held responsible for all H&S on the project. Senior Site Staff, Supervisors and Contractors are to follow systems, instructions etc. given by the CHSO at all times. No new workers or Contractors may commence work without the required site inductions and approval of the H&S Plan as submitted by Contractors.

The CHSO shall not be the same person as the CTSO, but will be responsible for ensuring that daily Traffic Management is adequately managed for the entire construction site.

A close-out meeting will be held at the end of each formal audit by the CHSA, and findings will be issued in the form of site instructions. Senior site staff will be obliged to attend the close out meeting.

A monthly report compiled by the CHSO of all H&S activities and incidents is available as an Annexure to this document and is required by the end of the first week of each month, or at a date agreed to by the CHSA and the CHSO.

The CHSO will be responsible for collating the H&S documentation (electronically) at the close out of the project. A list of the typical aspects that should be provided is available as an Annexure to this document.

Two-way radio communication between the CHSO's and CTSO is a site requirement**7.1.3 Construction Traffic Safety Officer (CTSO)**

The PC shall employ at least one competent, full-time CTSO's for the duration of the contract.

If the Employer's Agent and CHSA agree due to the nature and size of the contract the number of competent, fulltime CTSO's may be increased, then the PC will be required to employ as requested.

The CTSO will report directly to the CHSO. The CHSO's CV's and qualifications are to be submitted to the Employer's Agent and CHSA for approval.

Attention is drawn to the provisions of Section 1500 of the COLTO specifications as given in the Contract Data and Scope of Work.

Qualifications shall include at least

- Grade 12,
- SAMTRAC or similar,
- Traffic Safety Officer / Roadwork's Traffic Management
- OHS Act and Regulations,
- Valid driver's license,
- Minimum of two years exposure to Civil Engineering Construction in a CTSO capacity,

Resources

- Mobile phone,
- Camera with; Time, Date and GPS facilities
- Computer and internet access,
- Dash Camera for site video recording
- Dedicated Vehicle for each CTSO,

Any other equipment or facilities to enable him/her to carry out their duties effectively

Furthermore, no workers will be allowed to be transported in open vehicles, or with plant and materials.

Traffic accommodation drawings will be according to SARTSM Chapter 13 Volume 2, and any changes suggested or required are to be discussed and approved by the Employer's Agent.

Speed controls must be clearly stipulated and managed.

Speed limits must be strictly adhered to by all construction traffic. Unreasonable limits may be revised by the Employer's Agent and/or CHSA. Additional care must be taken where workers and construction traffic interface. This should be in the form of trained competent flag persons to direct vehicular traffic and adequate signage as directed by the Employer's Agent.

A system of recording daily traffic accommodation is to be provided. Video recordings and photographs are to be taken twice per day. At the beginning and end of each and every day, Monday to Sunday and including Public Holidays and Contractors Holidays proving compliance of traffic accommodation and site safety.

All daily records must be electronically saved and all reports signed by the CHSO, CTSO and the EAR.

Two-way radio communication between the CHSO and CTSO is a site requirement

7.2 Health and Safety Representatives and Committee (OHSA17 & 19)

H&S Representatives are to be appointed following the start-up of the project, to be made up from both permanent and Contractors and local labour. Representatives from local labour can be appointed to represent such labour for the duration of the contract. Local labour should not be responsible for H&S duties unless appropriate training has been provided and the CHSO deems such labour competent to do so. Development in H&S of such labour would be an advantage to the community and the PC.

H&S Representatives are to be actively involved with H&S and serve on the H&S Committee.

The CHSO shall ensure that there is a H&S Committee made up of active site staff and H&S Representatives, representing each work area, including all Contractors. Meetings will be held at least monthly, and more frequently if so instructed. Key site staff is to be appointed. Issues arising from the CHSA audits are to be discussed, as well as all H&S related issues. Minutes are to be distributed and discussed among all workers and Contractors and records kept thereof. H&S Committee Meetings are to be held in the first week of each month

7.3 Appointment of Competent Contractors (CR7.3)

The Principal Contractor is to ensure compliance with the Clients minimum standards and all legislative requirements. The same H&S standards required of the PC are to be applied to all Contractors. A register of all Contractors and Suppliers is to be on file and kept updated at all times. The PC is to ensure there is sufficient funding for H&S compliance by each Contractor. The following minimum aspects are applicable to any Contractor appointed:

- The H&S Officer is to ensure a Contractors appointment and approval of H&S documentation at least seven (7) working days prior to commencing work.
- No Contractor may work under the PCs Compensation Registration Number. If required the PC may assist SMMEs with their registration with the Compensation Commissioner. However, such Contractors will not be able to commence work until proof of registration or Letter of Good Standing has been received.
- No work may commence without Mandatory (37.2) agreements between parties in place.
- Contractor is to have an appointment letter

- OHS Plan Approval Letter issued by the PC

The following aspects are applicable to Suppliers or short-term works (surveying, repairs, servicing, deliveries etc.). Cognisance is to be taken of the level of risk involved and the CHSO is to ensure the level of H&S documentation is appropriate:

- Mandatory Agreements in place
- Letter of Good Standing
- TMS and Risk Assessments

C8. GENERAL RISK MANAGEMENT**8.1 Health Risks and Medical Surveillance**

A Contractor must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed as per Annexure 3 and issued by an Occupational Health Practitioner CR7.8.

Medical surveillance will commence at pre-employment. All workers (including Professional Team, Principal Contractor and Contractors) are required to be in possession of a medical certificate of fitness prior to commencing work. Annual medical surveillance is required (unless identified as being required more frequently), as well as an exit medical.

Given the potential health risks the following aspects are to be included in each medical surveillance intervention:

- Full medical, surgical and occupational history;
- Full physical examination of all systems, and
- Referral if required for the management of identified health issues that may affect the worker.

Specific testing for existing conditions and limitations relative to exposure could include, but are not limited to:

- Audiometry (hearing tests);
- Spirometry (lung function testing);
- Chest X-rays;
- Liver function testing (volatiles), and
- Any other tests identified as relevant

8.1.1 Noise Risks

All plant and equipment is to be measured for noise levels as soon as the majority of plant is on site (including Contractors construction plant and equipment). Findings are to be discussed at the H&S Committee and H&S Representatives and Supervisors are to ensure that noise zones are identified and wearing of PPE in them is enforced.

8.1.2 General Environmental Conditions

Any spillages of substances which could be toxic to persons must be dealt with adequately. The PC must include his spillage removal system in the OHS Plan.

8.2 Emergency Procedures

Attention to emergency planning and procedures is very important. The full emergency plan must form part of the supporting documentation with the H&S Plan. The CH&S Agents approval of all emergency plans and procedures is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The plan may be adapted should new information or risks be identified.

First aiders shall be available in each working team, and be able to work as a team when responding to any emergency on the project.

The procedure shall detail the response plan in relation to the works, and include at least (but are not limited to) the following key elements:

- Appointment of a competent emergency response co-ordinator and wardens;
- Lists of first aiders, and
- Requirement in terms of identified risks:
 - Fire;
 - Explosions;
 - Falls from heights, and
 - Motor vehicle accidents.

The emergency plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project. Local emergency telephone numbers must be displayed and made part of the emergency procedure.

8.2.1 First Aiders and First Aid Equipment

Competent, trained First Aiders are to be formally appointed for the project. If the project is in a remote area, at least 3 workers are to be trained to Level 3. In urban areas and close to medical assistance 2 Level 3 first aiders are required. Level 1 First Aiders are to be available at all times and be able to cover each working team. Further first aiders from the community or SMMEs, if not already accredited, are to be sent for SAQA accredited first aid training.

Contractors are expected to ensure compliance and manage their own first aiders and equipment.

The PC shall provide an on-site First Aid Station with first aid facilities, including first aid boxes containing, at least the requirements to manage the type of emergencies identified. All Supervisors are to carry a Regulation 3 first aid kit in their vehicles at all times.

8.2.2 Fires and Emergency Management

The PC shall ensure that any fire risks will be managed appropriately. Trained fire fighters shall be appointed at offices or areas where fire risks are deemed high. The emergency plan shall include the risk of fire at site camps, on site and related to any specific activities.

Fire extinguishers are to be appropriate for the risk and in sufficient numbers to deal with the type of fires that could occur. Every item of heavy plant, e.g. Graders, TLBs, Rollers etc., must be fitted with at least a 4.5Kg DCP fire extinguisher.

8.2.3 Incident Management and Compensation Claims

The PC will ensure there is a management system to investigate all incidents. All serious incidents involving any form of disabling injury or fatality are to be reported to the Employer's Agent and CHSA telephonically immediately. This shall be confirmed in writing as soon as possible after the incident. Full details are to be included in the H&S meetings, and each site meeting. The details are also to be included in the CHSO monthly report.

8.3 Personal Protective Equipment (PPE) and Clothing (PPC)

The wearing of the identified SANS approved PPE and PPC at all times is non-negotiable. The PC shall ensure that all workers (Including Contractors and other PCs) are issued with and shall wear PPE/PPC as per the OHS BoQ.

Adequate quantities of PPE shall be kept on site at all times. This shall include necessary PPE for visitors.

8.4 Occupational Health and Safety Signage

On-site H&S signage is required. Signage shall be posted up at the appropriate fixed or temporary working areas, on scaffolding, and other potential risk areas/operations including vehicles. These signs shall be in accordance with the requirements of the General Safety Regulations or SANS requirements as amended. Signage is to be noted on the site drawings indicating where fixed signage is required.

Signage is to include (but not be limited to) the following:

- 'no unauthorised entry';
- 'report to site office';
- 'site office';
- 'beware of overhead work';
- 'hard hat area' or other PPE / PPC requirements noted;
- First aid box positions (including vehicles), and
- Fire extinguishers

Signs shall be posted permanently or temporarily at areas of work onsite indicating that a construction site is being entered and that persons should take note of safety requirements.

The Contractor shall establish a system for controlling and recording entrance to the Site Office and camp area.

8.5 Induction of Employees and Visitors, General H&S Training

A formal induction programme is to be submitted as an addendum for approval with the H&S plan. Inductions must be carried out for all workers and visitors to the site. Pre-task training is required to ensure workers are familiar with the risks and H&S measures of the work or tasks to be done. Such training is to be done at least daily. Records of inductions and pre-task training are to be kept in the H&S file.

Any person found on site without proof of induction will be removed from site until the proof is supplied.

8.6 Testing Laboratory and the use of Radioactive Equipment

A joint laboratory may be required, or a service provider will be appointed for the project. The service provider will be seen as a Contractor, or where appointed as a joint laboratory, as a PC. All the H&S rules and requirements are to be met. Where appointed as a PC, the H&S Agent will be responsible for approving the initial H&S plan and ensuring on- going compliance. All other requirements of the construction PC are to be met. Each PC is to be familiar with the H&S rules of each party. Mandatory Agreements, Inductions and Emergency requirements among other are to be addressed and managed to ensure limitation of H&S risks.

The use of radioactive equipment for the measuring of compaction parameters shall conform to the requirements of the "Code of Practice for the safe use of soil moisture and density gauges containing radioactive sources" as published by the Department of Health: Directorate: Radiation Control Soil revised September 2001. TMS, risk assessments and the appropriate training will be required.

8.7 Use of Support Work, Scaffolding and other Temporary Works

Where temporary works are envisaged on the project, these must be properly designed and signed off by a competent person. In

these instances a competent person is defined as a Professional Engineer (registered with ECSA) who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Employer's Agent. Where the scaffolding, and /or support work is to be supplied and designed by a specialist company, care must be taken to comply with all the requirements of the supplier. Records and registers are to be properly completed and kept in the H&S file.

All formwork must be designed and approved by a competent person.

8.8 Quarries, Borrow Pits, Crushers, Blasting and Batch Plants

N/A

8.9 Management of Plant and Equipment

A substantial amount of large plant and equipment will be used. Close control of the PCs plant and equipment is required, including that of Contractors.

Daily monitoring of all plant and equipment is required prior to commencing work. Full lists of hired and own plant are to be available during the CHSA's audit. Copies of all daily inspection records are to be retained in the H&S file.

Registers are not to be more than 1 week behind. Plant Hire or Haulage Contractors are to comply with the requirements, and comply with all H&S standards for the project.

All supervisory vehicles and construction plant are to be fitted with a lamp or lamps capable of emitting an intermittently-flashing amber light in any direction.

All operators on site are to be competent and medically fit. The following documentation is to be supplied for each operator on site

- Valid medical certificate issued by an OH Practitioner
- Annexure 3 medical application as per CR
- Valid driver's licence
- Applicable PrDP for vehicle or plant
- Appointment letter
- Competency certificate for the specific vehicle or plant to be operated

Movement of plant in closures and in confined working areas is to be closely monitored and managed by the CHSO and CTSO and Supervisors. The blind spots of plant are to be taken into account and workers and Contractors protected accordingly.

8.10 Excavations

Steep slopes require careful management. A Geotechnical report is available and is to be utilised to assess ground conditions. Shoring may be required, where indicated in the Geotechnical report or by the Employer's Agent. The PC is to ensure that the Community Liaison Officer (CLO) and the local community, schools and general public are aware of the dangers of open excavations.

All excavations are to be securely barricaded at all times. Only snow fencing will be allowed.

Initial barricading will be the responsibility of the Excavation Inspector. Once the excavations have been barricaded this information will be submitted to the CHSO for continuous monitoring.

Continuous monitoring of all barricading around excavations will be the responsibility of the CHSO and CTSO.

8.11 Inclement Weather

High levels of humidity and temperatures during the summer months may be experienced. Workers are at greater risk of heat exhaustion where the discomfort index rises above 100. A weather station has been allowed for to monitor temperature and humidity specifically. Should the discomfort index rise above 105, work may be partially or totally stopped.

During winter in areas known for cold weather, notice must be taken of the wind-chill factor. Workers must be supplied with adequate protective clothing and shelters provided as necessary.

Flooding may occur during the rainy season. High winds may be experienced and to limit dust or danger when working at heights, a wind speed should be set at which work may be stopped or the workers in an affected area moved.

The emergency plan is to include how these and other weather extremes identified are to be managed. The general aspects as detailed in the Environmental Regulations will be applied.

All decisions regarding work stoppage will be decided between the PC, the CHSO and the Employer's Agent.

8.12 Auditing

External auditing by the CH&S Agent will be done at least monthly or more frequently if deemed necessary by the CHSA, Client or Employer's Agent. The site will be inspected and the documentation audited relative to the activities and PC H&S Plan. The CHSO of the PC must accompany the Client, or the CHSA, on all audits and inspections.

The PC will ensure that all their Contractors are audited at least monthly prior to the CHSA monthly audit by the CHSO and these audit reports are to be available for perusal by the CHSA during the audit.

Audits may be done more frequently where short term contracts are in place, or deemed high risk. Audit results will be acted upon and non-conformances and penalties issued. The Client, Employer's Agent or CHSA may act or require further outcomes if non-compliances are noted or unsafe acts are noted on site. Internal audits are to include site conditions as well as ensuring H&S files are appropriate, and compliant.

8.1 Communication on Site

All communication on site will be done through the Employer's Agent to the PC and be in writing, including the issue and responses to non-conformances and H&S audit results.

8.14 Care of Workers on Site (Welfare)

Toilets for each sex where applicable, will be within reasonable distance of workers, or placed with each working team in safety, with reasonable privacy. Only bacterial or enzyme based products may be used in portable toilets; the use of products containing Formaldehyde is not allowed. The ratio of portable toilets on site will be a minimum of 1:15.

Daily cleaning and increased removal of waste may be required if deemed necessary. Proof of safe disposal of waste will be required. Waste Removal Contractors or the PC are to ensure the appropriate H&S systems are available to limit exposure to sewage.

Hand washing facilities will be provided. The Environmental and Facilities Regulations will be adhered to at all times.

8.15 Discipline, Alcohol and Substance Abuse

All employees (management included) are to follow instructions given in the interest of H&S. Disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies.

No person is allowed to work or access site if under the influence of alcohol or other substances that could impact on their own or others safety. The PC is to have a drug and alcohol policy available to manage such instances.

8.16 Electrical Equipment

In addition to the requirements of the Electrical Machinery Regulations and the General Machinery Regulations any electrical distribution board used for construction work shall be fitted with suitable earth leakage protection. Leads must be properly and firmly connected, they should be so placed as to avoid damage especially if they cross portions of the site. Plugs and sockets shall be in good and safe condition.

All electrical apparatus, other than electrical hand tools, shall have a physical "lock out" system which will prevent any operation other than that authorized by a supervisor. A "lock out" sign shall be displayed when the apparatus is not in use.

TMS and Safe Work Procedures will be required for all work involving electrical apparatus.

8.17 Traffic Accommodation

Traffic accommodation is covered under section 1500 of the COLTO specifications which form part of this contract and as amended by the requirements listed in the Amendments to the Standard Specification.

8.18 Transportation of Workers to and on Site

Transportation of workers shall comply with the relevant legislative requirements. Vehicles used to transport workers to, from, or on site, shall have secure seats with seat belts and be covered. No equipment or materials shall be transported in the same vehicle at the same time as workers.

The CTO's and their teams are to have vehicles which are designed to safely transport employees as well as equipment at the same time.

Tenderers must indicate in their OHS Plans what type of transport is envisaged for the general employees and how this will be managed.

C9. HEALTH AND SAFETY FILE

The documentation submitted and approved following the awarding of the contract will be used to form the H&S file. The H&S file is required to be laid out in a logical manner, and documentation filed within the file is to be easily accessible.

The H&S File shall be closed out following the hand-over of the project. A list is available as an ANNEXURE F CLOSE OUT REQUIREMENTS.

C10 NON-CONFORMANCES

Should, at any time, the works, or part of the works, be stopped due to unsafe acts or non-compliance with the Clients PSHSS or PCs H&S Plan; neither the PC nor any other Contractor shall have a claim for extension of time or any other compensation. Penalties will be imposed on the Principal Contract by the Clients CHS Agent through the Clients Agent.

The following constitute examples of the types of non-conformances that will attract penalties:

Minor Penalty: R500.00 / count	Medium Penalty: R1000.00 / count and a non- conformance	Severe Penalty: R5000.00 / count, a non-conformance and / or activity stoppage
Non-use of PPE supplied	Toilets not supplied or regularly serviced Lack of drinking water	Contractors working without Health and Safety Plan approval

Non completion of registers for plant and equipment on site	Contractors not audited	Workers transported in contravention of the OHS plan or legal requirements
Lack of H&S signage at work areas	Working without training or the appropriate H&S TMS	Invalid Letter of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	Non-compliance with traffic accommodation requirements: layout or physical conditions
	No monthly OHS report at site meeting to report on	Fall protection harness not tied off / not worn
	No certificates of fitness for workers as required	Any breach of legal requirements
	Working without approved TMS	

10.1 Failure to Comply with Provisions

Failure or refusal on the part of the contractor to take the necessary steps to ensure the safety of workers and the general public in accordance with these specifications or as required by statutory authorities or ordered by the Employer's Agent or the Client's H&S Agent, shall be sufficient cause for the Employer's Agent to apply penalties as follows:

- (i) A penalty as shown in the Table above shall be deducted for each and every occurrence of non-compliance with any of the requirements of the PSHSS.
- (ii) In addition a time-related penalty of R500.00 per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any non-conformance within the allowable time after a site instruction to this effect has been given by the ER or Employer's Agent. The site instruction shall state the agreed time, which shall be the time in hours for reinstatement of the defects. Should the Principal Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given to the Principle Contractor

FAILURE TO COMPLY WITH ANY OF THE ABOVE AS WELL AS ANY OTHER LEGAL REQUIREMENT WILL BE CONSIDERED A SERIOUS OFFENCE.

C11. MEASUREMENT AND PAYMENT

The payment items for Occupational Health & Safety are contained in Schedule C of the Bill of Quantities. The same rules are applicable in respect of the pricing of these items as for every other payment item. Attention is drawn to the Pricing Instructions in Part C2.1 of this document.

Item and Unit

01 Preparation of Contractor's Project Specific Health and Safety Plan. (Lump Sum (LS))

The rate for this item must cover all expenses incurred in preparing the Contractor's project specific Health and Safety Plan as required by the Client's Project Specific Health and Safety Specification in this document

02 Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction

Regulations.**(Lump Sum (LS))**

The full amount will be paid in one instalment only when the Client's Agent has verified and approved the following

- a) The Principal Contractor has made the required initial Appointments of Employees and Contractors
- b) The Client has approved the Principal Contractor's project Health and Safety Plan
- c) A Construction Permit Number has been received from the DoL
- d) The Principal Contractor has set up his Health and Safety File.

03 Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations. (Month (Mth))

The amount shall represent full compensation for that part of the Principal Contractor's general obligations in terms of the Occupational Health and Safety Act and Regulations which are mainly a function of time.

Payment will be made when the Client's Agent has verified the Principle Contractor's compliance as part of the audit. This will include the updating and administration of the Health and Safety file

04 Provision of Personal Protective Equipment (PPE) as listed in the Bill of Quantities. (Number (No))

The rates for these items shall include for the procurement, delivery, storage, distribution and all other actions required for the supply of PPE to the employees of the Principle Contractor, full or part time, requiring them. Contractors are responsible for their on costs in this regard. Any items of PPE not included on the list will be paid for only after the Employer's Agent has agreed to their acquisition.

Items listed will include, among others which may be noted, are: hard hats, reflective vests, reflective bibs, high visibility overalls, protective foot wear, fall arrestor harness and tethers, gloves, ear muffs, earplugs and dust masks of appropriate type. Normal items such as standard overalls, waterproof clothing, gum boots and standard workshop safety equipment such as welding masks and goggles will not be paid for.

Payment will be based on the issues register for PPE as kept by the Construction Health and Safety Officer, backed up by paid invoices if requested.

05 Provision of full time Construction Health and Safety Officer (Month (Mth))

The Tender sum shall include for the cost of a Construction Health and Safety Officer on a full time basis, his overheads, transport and all others items necessary for the proper carrying out of his duties, which include the induction and training of all persons on site.

06 Provision of full time Construction Traffic Safety Officer (Month Mth))

The Tender sum shall include for the cost of a Construction Health and Safety Officer on a full time basis, his overheads, transport and all others items necessary for the proper carrying out of his duties

07 Costs of Medical Surveillance (Unit (No))

This item shall cover all costs involved in the obtaining of baseline, periodic (at least annually) and exit medical certification and conducting medical surveillance for all workers and especially operators of construction vehicles and mobile plant as contemplated in CR 23; Workers at Heights CR16 and workers exposed to hazardous chemicals including bituminous fumes under Regulation 7 of the HCSR; for temporary workers and workers exposed to noises at or above the limits given in the Noise-Induced Hearing Loss Regulations, as stipulated above.

Workers in the permanent employ of the Contractor will only be paid for if their certificates require updating. Chest X-rays will be required in the case of workers who may be exposed to high concentrations of dust (silica).

- a) Initial (baseline) medical examinations, including audiometric and lung function testing
- b) Annual examinations
- c) Periodic examination
- d) Exit examinations

08 Induction Training (Unit (No))

This item shall cover all costs incurred for the health and safety inductions as set out in Regulation 7 of the Construction regulations and the proof of induction required. Payment will be made on the figures contained in the induction section of the Health and Safety File.

09 Environmental Monitoring (Unit (No))

Payment for this item shall cover all costs incurred in testing and monitoring the environment in respect of general health hazards including the presence of hazardous chemicals, as required by the Construction Regulations and the Mine Health and Safety Act.

- a) Air Quality Monitoring
- b) Compliance with Amendment of the Occupational Exposure Control Limit for Silica in Table 1 of the Hazardous Chemical Substances Regulations (February 2010)
- c) Air sampling in situ
- d) Analysing samples
- e) Tests on Workers

The rates for these items shall include for all air monitoring, air sample testing and tests on workers for silica exposure as required by the above amendment. It should be noted that these items must be under the control of an authorised inspection authority which would normally be a registered H&S Hygienist or Occupational Health Practitioner familiar with the Hazardous Chemical Regulations and include for all necessary costs in this regard including travelling to and from site and all required reporting.

10 Establishment of Noise Levels (Unit (No))

This item shall cover all costs involved in the establishment of noise zones, including any workshops, in terms of Regulation 9, of the Noise-Induced Hearing Loss Regulations. Where a zone has previously been established for a particular item of plant within the last two years, the test need not be repeated but must be kept valid for the duration of the Contract.

11 Item Payment for Health and Safety Representatives at meetings (Unit (Hr))

The rate for this item shall cover the cost to the Contractor of the attendance of Health and Safety representatives at monthly meetings and shall compensate the Contractor for loss of productive time at these meetings

12 Provision of First Aid Boxes (Unit (No))

The rate for this item shall cover all costs incurred in the provision of first aid boxes as outlined in Paragraph 7 above.

13 Transportation of Local Labour (Month (Mth))

The Lump Sum tendered under this Item shall cover all costs involved in the safe transportation of local labour as outlined above. Payment will be made in equal amounts for the duration of the contract.

The above transportation cost excludes the transportation of the Principal Contractors permanent employees.

14 Submission of the Health and Safety File (Prov. Sum)

Expenditure under this item shall be made in accordance with the general conditions of contract.

This amount will be paid only once the Principal Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

This must be done prior to the issue of a Certificate of Completion

Notwithstanding any statements in section 1300 of the COLTO Specifications, should the Certificate of Practical Completion be issued after the Contractual Completion date no payment will be made under items 02 and 03 for the period between the Contractual Completion date and the date of issue of the Certificate of Practical Completion.

This, however does not relieve the Principal Contractor of any of his legal responsibilities for Occupational Health and Safety in terms of the Act and Regulations

15 Submission of Contractors OHS File (SMME's) (Number (No))

The rate for this item must cover all expenses incurred in preparing the Contractor's project specific Health and Safety File as required by the Client's Project Specific Health and Safety Specification in this document

The full amount will be paid in one instalment only when the Client's Agent has verified and approved the following

- a) The Contractor has made the required initial Appointments of Employees
- b) The Principle Contractor has approved the Contractor's project Health and Safety File
- c) A valid Letter of Good Standing has been submitted by the Contractor
- d) The Contractor has registered their employees with the Unemployment Insurance Fund

16 Additional OHS Duties (Prov. Sum)

Any additional OHS duties which are identified by the Client or the Clients Agent and also approved by the Clients CHS Agent CHS Agents reviews (Prov. Sum)

Review of Principal Contractors and Contractors bid documents with regards to OHS

17 Non-Conformances (Negative Sum)

- a) Minor
- b) Medium
- c) Severe

ANNEXURE A
SPECIFIED HAZARDOUS CHEMICAL SUBSTANCES

PRODUCT	POTENTIAL HEALTH OR OTHER RISKS
Cement	Hand mixing may occur, will be used for structures, stabilizing. 50kg bags delivered on pallets, ergonomic risk from handling, dust exposure, chromates. Eye, skin and respiratory irritant
Shutter Oil	Usually hand application prior to placing formwork in position. Volatiles present. Skin and respiratory irritant.
Retro-reflective Road paint	High levels of volatiles, Products have narcotic effect. Carcinogen
Petrol/Diesel/Lubricants	Storage tanks/ bowsters on site. Fire, spillage, fumes
Superphosphate Fertilizers	Eye, respiratory and skin irritant
Limestone Ammonium Nitrate Fertilizer (LAN)	Prolonged skin or eye contact could cause irritation. Explosive and will release toxic fumes if heated
Formula 2:3:2 Fertilizer	Prolonged skin or eye contact could cause irritation. Explosive and will release toxic fumes if heated.
Creosote (pre-treated poles)	Eye and skin irritation and minor burns, carcinogen
Herbicides and Ant Poison	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Epoxies and Epoxy Resins	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Coatings	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Grouts	Will be determined by the Principal Contractor; various grouts will be required, cementitious or other, may contain silica (crystalline - quartz), hexavalent chromium, respiratory, skin and eye irritant

ANNEXURE B
RECORDS TO BE RETAINED ON SITE

ITEM	CR	RECORD TO BE RETAINED IN THE OHS FILE	RESPONSIBLE PERSON
1.	3(3)	Notification to Provincial Director – Annexure 1 or 2 Available on site	Principal Contractor
2.	4(3)	Copy of Principal Contractor's Health & Safety Plan Available on request	Client (Consultant)
3	4.(g)	A Valid Letter of Good Standing in respect of Workman's Compensation	Principal Contractor
4	5(6)	Copy of Principal Contractor's Health & Safety Plan As well as each Contractor's Health & Safety Plan Available on request	Principal Contractor
5	5(7)	Health & Safety File opened and kept on site (including all documentation-required in respect of the OHSA & Regulations. Available on request	Principal Contractor
6.	5(8)	Consolidated Health & Safety File handed to Client on completion of Construction work. To include all documentation required by the OHSA & Regulations.	Principal Contractor
7.	5(9)	Comprehensive and Updated List of all Contractors on site, the agreements between the parties and the work being done.	Principal Contractor
8.	6(7)	Keep record on the Health & Safety File of the input by Construction Health and Safety Officer [CR 6 (6)]	Principal Contractor
9.	7(2)	Risk Assessments, kept up to date and available on site for inspection	Principal Contractor
10.	7(9)	Proof of Health & Safety Induction Training	Every Employee on site
11.	8(3)	Construction Supervisor [CR 6 (1)] has latest updated version of Fall Protection Plan [CR 8 (1)]	Principal Contractor
12.	9(2)(b)	Inform Principal Contractor in writing of dangers and hazards relating to construction work	Designer of Structure
C.	9(3)	All drawings pertaining to the design of structure On site available for inspection	Principal Contractor
14.	9(4)	Record of inspection of the structure [First 2 years – once every 6 months, thereafter yearly]	Owner of Structure
15.	9(5)	Maintenance records – safety of structure Available on request	Owner of Structure
16.	10(1)(d)	Drawings pertaining to the design of formwork/support work structure. Kept on site, available on request	Principal Contractor
17.	11(3)(h)	Record of excavation inspection On site available on request	Principal Contractor
18.	15(11)	Suspended Platform inspection and performance test records. Kept on site available on request	Principal Contractor
19.	17(8)(c)	Material Hoist daily inspection entered and signed in record book kept on the premises	Principal Contractor
20.	17(8)(d)	Maintenance records for Material Hoist Available on site	Principal Contractor

21.	18(9)	Records of Batch Plant maintenance and repairs On site available for inspection	Principal Contractor
22.	19(2)(g)(ii)	Issuing and collection of cartridges and nails or studs (Explosive Powered Tools) recorded in register – recipient signed for receipt as well as return	Principal Contractor
23.	21(1)(d)	Findings of daily inspections (prior to use) of Construction Vehicles and Mobile Plant	Principal Contractor
24	22(d)	Record of temporary electrical installation inspections [once a week] and electrical machinery [daily before use] in a register and kept on site	Principal Contractor
25		Copies of all appointments made in regard to safety supervisors and inspectors	Principal Contractor
26		Record of safety inspections on equipment using radioactive materials.	Principal Contractor
27		Any other records as required by the Client or his OHS Agent	

ANNEXURE C
CONSTRUCTION HEALTH AND SAFETY OFFICER MONTHLY REPORT

MONTH ENDING: YEAR:

Manpower Returns		Current Month	Project to Date
Total Number Principal Contractors employees			
Total Number Contractor employees			
Total Number of Contractors			
No. Shifts/Days Worked (incl. Weekend & Public Holidays)			
Man Hours Worked			
Total for Principal Contractor			
Total for Contractor/s			
Total All Man-Hours For Current Month	Total All Man-Hours Worked (P.T.D)	LTI Free Hours (from Last Incident)	Target LTI Free Hours

List of Contractors		No. of Employees		No. of Vehicles
Incident Report	Current Month	Project to Date	Investigation Status	
No. of First Aid Cases	0	0	N/A	
No. of Medical Cases	0	0	N/A	
No. of Lost Time Injury (LTI) excluding Fatalities	0	0	N/A	
No. of Occupational Disease Cases	0	0	N/A	
No. of Fatalities	0	0	N/A	
No. of Reportable Incidents	0	0	N/A	
No. of Environmental Incidents	0	0	N/A	
No. of Property Damage	0	0	N/A	
No. of Near Misses	0	0	N/A	
No. of Vehicle related Accidents	0	0	N/A	
Disabling Injury Frequency Rate	Current Month		Project to Date	
(LT Injuries x 200 000) / man hours				

Incident Details

Incident No.	Brief Details (incl. Nature of Injury, e.g. Laceration on Right Hand)	Status of Injured Employee/s	Incident Type (e.g. Fall to Below, Struck By)
Incident Analysis and Trends and Action Plans			
(Including new or revised risk assessments)			

Corrective Actions Implemented	Actioned By	Date Completed

OHS Training	Current Month	Year to Date
Induction	0	0
Safety Representative	0	0
First Aid	0	0
Fire Fighting	0	0
Scaffold Erection and Inspection	0	0
Vehicle (stipulate)	0	0
Safety Harness	0	0
Other	0	0
Other	0	0

Site Audits & Inspections			
Management	0	0	
Client	0	0	
External	0	0	
Additional Comments / Remarks (e.g. site issues or concerns)			
<u>Awards or Achievements:</u>			
Submitted By			
Name	Designation	Signature	Date

**ANNEXURE D
CLOSE OUT REQUIREMENTS**

CONSOLIDATED HEALTH & SAFETY FILE			
Construction Regulations - February 2014 7(1b,e & f)			
1	DEFINITION: CONSOLIDATED HEALTH AND SAFETY FILE		
	A file or other means containing record in permanent form, of the information required as contemplated in the Construction Regulations of February 2014: Regulation 7(1b, e & f)		
	The H&S files for the Principal Contractors and all Contractors require closure and handover to the Client at the completion of the project.		
	The following list is an example of what should be included, but is not exhaustive. The OHS Agent or the Client may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are met. Documentation would include all records from the start of the project. Daily or monthly plant inspection records are not required unless they are related to an accident. All records to be in electronic format and submitted to the OHS agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.		
	REQUIRED DOCUMENTATION		
2	The Principle Contractor submits a formal letter to the project appointed Agent, consolidating and Confirming the H & S history of the project.	INCLUDED	
	The following summary of information is required in the letter, but not limited to:	YES	NO
a	Client H&S Specification		
b	Principal Contractor's OHS Plan(s)		
c	Organograms		
d	Legal Appointments		
e	Notification to Department of Labour of commencement of work		
f	Letters of Good Standing for the Project		
g	Full files for all Contractors as well as their close out reports		
i	List of Contractors		
ii	Letters of Approval of Contractors		
iii	Mandatarly Agreements		
iv	Letters of Good Standing		
v	Appointments		
h	Incident Records		
	Non- Conformance records		
	Agent's Audits		
	TMS		
	Risk Assessments		
	Safe Work Procedures		
	Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended.		
	All drawings for temporary structures (suspended beams/scaffolds etc)		
	Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)		
3	The Client's appointed OHS Agent will verify the submission of the Principal Contractor in writing before handing the above documentation to the Client		

4	The Client / Agent need to evaluate the SHE performance of the Principal Contractor i.e. Compliance, Performance, Quality and refer same in their cover letter which will be added to the Principal Contractor's portfolio of evidence.				
5	<table><tr><th colspan="2">Defect and Liability Period</th></tr><tr><td></td><td>The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OH&S Agent prior to any work commencing.</td></tr></table>	Defect and Liability Period			The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OH&S Agent prior to any work commencing.
Defect and Liability Period					
	The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OH&S Agent prior to any work commencing.				

ANNEXURE E**ANNEXURE 1****APPLICATION FOR A PERMIT TO DO CONSTRUCTION WORK****In terms of Regulation 3(2) of Construction Regulations, 2014**

This application must be submitted with the following documents

1. Health and Safety Specification
2. Health and Safety Plan
3. Baseline Risk Assessment

1. Name, Postal Address and Telephone Numbers of the Client:

.....
.....

2. Details of the Construction Health and Safety Agent:

a) Title, Surname and Initials:

b) Identity Number / Passport Number:

.....

c) Registration Number with SACPCMP:

.....

d) Office Tel. Number and / or Mobile Number:

.....

e) Postal Address:

.....
.....

3. Name, Postal Address and Telephone Numbers of the appointed Principal Contractor:

.....
.....

4. Name, Postal Address and Telephone Numbers of Designer of the Project:

.....
.....

5. Name, Postal Address and Telephone Numbers of the following Persons:

a) Construction Manager: CR 8.1

.....
.....

b) Construction Health and Safety Manager:

.....

c) Construction Health and Safety Officer: CR 8.5

.....

6. Exact Physical Address of Construction Site and Site Office:

.....

7. Nature of Construction Work:

.....

8. Expected Commencement Date:

9. Expected Completion Date:

10. Estimated Maximum Number of Persons on the Construction Site:

11. Planned Number of Contractors on Site accountable to the Principal Contractor:

12. Names of Contractors Appointed:

.....

.....

13. Signature of Client / Client's CHS Agent

.....

14. Signature of Principal Contractor

FOR OFFICE USE ONLY

Authorization / Unique Number

Labour Centre

**Official Approval
Stamp**

15. Date of Application:

16. Submitted Documents Prescribed in Construction Regulation 5.4 (Please Tick ☐)

CR 5.1(a)		CR 5.1 (b)		CR 5.1 (c – s)	
17. Result of the Application (Please Tick ☐)		Approved		Declined	
18. Reason for Declining the Application: 19. Signature of Supervisor 20. Signature of Revoking Officer / Inspector					

Construction Regulations 2014

THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR

30 DAYS PRIOR TO COMMENCEMENT OF WORK ON SITE

ANNEXURE F**ANNEXURE 2 NOTIFICATION
OF CONSTRUCTION WORK****Regulation 4 of the Construction Regulations, 2014**

1. (a) Name and Postal Address of Principal Contractor:

.....

- (b) Name and Telephone Number of Principal Contractor's Contact Person:

.....

2. Principal Contractor's Compensation Registration Number:

.....

3. (a) Name and Postal Address of Client:

.....

- (b) Name and Telephone Number of Client's Contact Person or Agent:

.....

4. (a) Name and Postal Address of Designer(s) for the Project:

.....

- (b) Name and Telephone Number of Designer's Contact Person:

.....

5. Name and Telephone Number of Principal Contractor's Construction Manager on Site appointed in terms of Regulations 8 (1):

.....

6. Name/s of Principal Contractor's Supervisors on Site appointed in terms of Regulation 8(7):

.....

7. Exact Physical Address of the Construction Site or Site Office:

.....

8. Nature of the Construction Work:

.....

.....

9. Expected Commencement Date:

10. Expected Completion Date:

11. Estimated Maximum Number of Persons on the Construction Site:

Total: Male: Female:

12. Planned Number of Contractors on the Construction Site accountable to Principal Contractor:

.....

13. Name(s) of Contractors already selected:

.....
.....
.....

.....
Principal Contractor

.....
Date

.....
Client's Agent (where applicable)

.....
Date

.....
Client

.....
Date

- THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR **7 DAYS PRIOR TO COMMENCEMENT** OF WORK ON SITE

ANNEXURE G

**OCCUPATIONAL HEALTH AND SAFETY ACT, ACT 85 OF 1993
CONTRACTORS 37.2 AGREEMENT**

**AGREEMENT WITH MANDATORY
In terms of Section 37(1) and (2)**

WRITTEN AGREEMENT ENTERED INTO AND BETWEEN

KSD LOCAL MUNICIPALITY
(Hereinafter referred to as the “PSJ-LM”)

AND

PRINCIPAL CONTRACTOR
(Hereinafter referred to as the “Principal Contractor”)

Compensation Fund Number: _____

Valid Letter of Good Standing to accompany this Mandatory Agreement

PRINCIPAL CONTRACTOR'S UNDERTAKING AND INDEMNITY

1. The Principal Contractor hereby agrees and undertakes, in terms of Section 37(2) of the Act, to accept full responsibility for all health and safety matters for the duration of its carrying out the work, including but not limited to:-
 - 1.1 providing for the health and safety of its Personnel and ensuring that its personnel at all times adhere to the provisions of the Act and the terms and conditions of the Agreement; and
 - 1.2 ensuring that no third party's health and safety is endangered in any way by the Contractor's activities or conduct on KSD-LM premises.
2. The Principal Contractor hereby indemnifies and holds the KSD-LM harmless against any loss, action, expense, claim, harm or damage of whatsoever nature suffered or sustained by the KSD-LM pursuant to a breach by the Principal Contractor or its Personnel and/or Contractors, of the provisions of the agreement and the Act.

The Principal Contractor's obligations include, without limitation, the following: -

1. The Principal Contractor shall not cause, as far as is reasonably practicable, any harm to or endanger any KSD-LM personnel or other persons on the KSD-LM premises at which the Principal Contractor is carrying out the work.
2. The Principal Contractor shall ensure that its personnel have access to an updated copy of the OHS Act at all times.
3. The Principal Contractor agrees to co-operate with the KSD-LM and provide the PSJ-LM with all information relating to occupational health and safety issues where the KSD-LM requests such information, including any non-compliance with the requirements of the Act.
4. The Principal Contractor shall ensure that the Personnel, when on KSD-LM premises, at all times adhere to the standard health, safety and security procedures and guidelines as laid down by the KSD-LM for its own personnel in terms of the Act, as varied and conveyed by the KSD-LM to the Principal Contractor from time to time.
5. The Principal Contractor shall ensure that, where applicable in terms of the Act, members of its personnel involved in carrying out the work undergo thorough medical examinations prior to commencing any activity on KSD-LM premises and continue to undergo routine medical examinations for the duration of the work.
6. The Principal Contractor shall ensure that the work carried out on KSD-LM premises shall be carried out under strict supervision by qualified members of the Principal Contractor personnel who are trained to understand the hazards associated with the work and who are authorized to take such precautionary measures as are necessary. Further, the Contractor shall enforce disciplinary measures where any member of its Personnel does not comply with the provisions of the Act.
7. The Principal Contractor shall ensure that all members of its personnel report any unsafe or unhealthy work situations to the Principal Contractor immediately. The Principal Contractor will in turn report such situations to the PSJ-LM's Dedicated Manager immediately.
8. In the event of an incident occurring on KSD-LM premises, the Principal Contractor shall immediately notify the KSD-LM thereof and shall inform the relevant provincial director at the Department of Labour thereof within 7 (seven) days of the incident occurring. The KSD-LM reserves the right to retain an interest in any such incident. Accordingly, the Principal Contractor shall provide the KSD-LM with copies of all documentation relating to the incident and any formal investigations or inquiries conducted in terms of the OHS Act.
9. The Principal Contractor shall under no circumstances bring any intoxicating substances onto KSD-LM premises. Where the KSD-LM has reason to believe that any member of the Principal Contractor

personnel is under the influence of an intoxicating substance, the KSD-LM shall be entitled to deny such person access to or remove such person from the KSD-LM premises.

10. In terms of section 10(4) of the Act, the Principal Contractor undertakes that where it uses an article sourced from a third party in the course of carrying out the work, it shall ensure that such article complies with the prescribed requirements.
11. The Principal Contractor undertakes that all vehicles used on KSD-LM premises shall be in a roadworthy condition and shall be fully licensed and adequately insured. The Principal Contractor undertakes further that it shall use suitably skilled and licensed drivers for such vehicles and that no passengers shall be carried in these vehicles unless the vehicle in question has been specifically designed for carrying passengers. Further, the Principal Contractor shall comply with the requirements of the Hazardous Substances Act No 15 of 1973, as amended from time to time, where hazardous substances are carried on any of its vehicles.
12. The Principal Contractor undertakes, at all times, to adhere to the minimum requirements

for environmental standards as set out in the OHS Act, including but not limited to lighting requirements, thermal requirements, ventilation, flooding precautions, fire precautions and noise conservation and further undertakes not to cause any impairment to the existing environmental conditions on KSD-LM premises.
13. The Principal Contractor shall at all times have an adequate supply of fire protection equipment at the KSD-LM premises on which the work is in progress. The Principal Contractor shall also ensure that all personnel on KSD-LM premises are familiar with the PSJ-LM's fire precautions and procedures, including alarm signals and emergency exits and that they adhere to such precautions.
14. The Principal Contractor shall provide and maintain in good condition, a satisfactorily equipped first aid box where there are more than five personnel members at the KSD-LM premises.
15. The Principal Contractor shall ensure that all personnel are trained and provided with instructions and information on health and safety aspects relating to the work and that they understand the hazards associated with the work being carried out on the KSD-LM premises, if applicable.
16. The Principal Contractor shall ensure that where needed, health and safety equipment shall be provided or installed.
17. The Principal Contractor shall further ensure that all personnel using any machinery or other equipment are properly trained and qualified to use such machinery or other equipment and that precautionary measures are taken when using any machinery or equipment.
18. The Principal Contractor shall not permit any person to enter KSD-LM premises where the work is being carried out where the health and safety of such person is at risk or may be at risk. Where the KSD-LM deems it necessary, the Principal Contractor agrees to post a notice at the PSJ-LM premises prohibiting the entry of unauthorized persons onto the KSD-LM premises.
19. If the Principal Contractor is to engage in construction work on KSD-LM premises and if the nature of such construction work falls within the ambit of section 3 of the Construction Regulations to the OHS Act, it shall inform the relevant provincial director at the Department of Labour thereof and provide the provincial director with the information required in the aforementioned Section 3.
20. The Principal Contractor shall at all times allow inspectors access to KSD-LM premises and shall allow them to inspect the work. The Principal Contractor shall not prevent any inspector from removing any article, substance, machinery or documentation and shall allow an inspector to provide assistance where such inspector deems necessary.
21. Should the KSD-LM at any time have reason to believe that any member of the Principal Contractor personnel is failing to comply with the provisions of the OHS Act or that such personnel member poses a threat or risk to the PSJ-LM, the KSD-LM shall be entitled to deny such personnel-member access to any or all of the PSJ-LM's premises and require the Principal Contractor to replace such

member of its personnel without delay.

Principal Contractor WARRANTIES

The Principal Contractor hereby warrants that it shall at all times:-

1. comply with all provisions of the OHS Act and the Regulations thereto;
2. be in possession of all required permits to carry out the work, such permits to remain valid for the full duration of the work;
3. be in possession of a valid registration with the Compensation Commissioner in terms of the Compensation for Occupational Injuries Act No 130 of 1993 and have paid all monies due to the Compensation Commissioner. The Principal Contractor must ensure that its cover under the abovementioned OHS Act remains in force for the duration of the work;
4. be in possession of and present to the KSD-LM on signing hereof, a letter of Good Standing from the Compensation Commissioner;
5. have correctly trained personnel with the required certifications and qualifications as prescribed by the Act;
6. maintain acceptable levels of hygiene and cleanliness in carrying out the work;
7. carry out and comply with all requirements prescribed in terms of the General Safety Regulations to the Act, including but not limited to:-
 - 7.1 using adequate personal protective equipment where applicable; and
 - 7.2 using machinery which is in good order and is fit for the purpose for which it is intended; and
8. as far as reasonably practicable, ensure that any persons other than the Personnel who may be directly affected by the Principal Contractor activities shall not be exposed to health and safety dangers as a result of the work which the Contractor is carrying out.

ACCEPTANCE BY MANDATORY

SIGNED at on 20.....

For and on behalf of **PSJ-LM**

NAME & OFFICE

WITNESSES:

1 _____

2 _____

SIGNED at on 20.....

For and on behalf of the **Principle Contractor**
WITNESSES:

1 _____

2 _____

Name & Position

ANNEXURE H

OHS BILL OF QUANTITY EXAMPLE ONLY – DO NOT COMPLETE THIS FORM					
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
1	Preparation of the Contractor's site specific Health and Safety Plan	Lump Sum	1		
2	Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Lump Sum	1		
3	Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Month			
4	Provision of Personal Protective Equipment (PPE)				
	Back				
	(a) High Visibility Vests SARTSM Level 2 - EN 471 Class II Certified 50mm silver reflective stripe				
	EXAMPLE ONLY				
	Polyester Zip front and ID pouch				
	(b) High Visibility Broad Brimmed Hats 100% Lime coloured Polyester	No			
	(c) Hard Hats SANS 1397:2003 Hard hats fitted with a three-point chin strap that meets the requirements of SANS 1397: Section 3.8 Sun Brim (For Hard Hat) SANS 1387-4, material type D59	No			

	(d) Protective Foot Wear – Normal Work Lace up boots marked bearing SANS 20345 certification Heat resistant up 95 degrees Celsius, steel toe caps Genuine leather upper and Poly Urethane sole	Pairs			
	(e) Protective Foot Wear – Wet Work Rubber boots with steel toe caps	Pairs			

	SANS 20245				
	(f) Earplugs - Disposable 23dB SNR	No			
	(g) Ear Defenders - Muffs SANS approved 30dB SNR and NRR	No			
	(h) Dust Masks Filter Class FFP2	No			
	(i) Gloves 10 gauge cotton polyester gloves with textured latex dip on palm and fingers including a knitted cuff and knit wrist	Pairs			
	(j) Eye Protection ANSI Z87.1, SANS 1004:1993 or EN 166:1995 Compliant	Pairs			
	(k) High Visibility Overalls SARTSM Level 3 Overalls (Royal Blue or Orange) - J54 Fabric conti suits made to SANS Spec,				
	EXAMPLE ONLY				
	and "X" on the back Triple stitched and bar tacked on all stress points				
	(l) High Visibility Thermal Jacket EN 471 Class II Certified 50mm silver reflective stripe around torso, over shoulders and "X" on the back 100% lime coloured Polyester Zip front and ID pouch	No			
	(m) Rain Suits SANS 1387:2009 High-viz fabric	No			

5	Provision of 2 x Full Time Construction Health and Safety Officers	Month			
6	Provision of 2 x Full Time Construction Traffic Safety Officers	Month			
7	Cost of Medical Certificates and Medical Surveillance				
	(a) Initial (baseline) medical examinations	No			
	(b) Annual medical examinations	No			
	(c) Exit examinations	No			
	(d) Contractor's charges to allow for handling costs and profit in respect of sub-items C.06 (a) and (b)	%			
8	Induction training	No			
9	Environmental Monitoring				
	(a) Air quality monitoring	No	1		
	(b) Measuring of Silica	No	1		
	(c) Air sampling	No	1		
	(d) Analysing samples	No	1		
	EXAMPLE ONLY				
	for handling costs and profit in respect of sub-items C.08 (a) to (e)	%			
10	Noise Monitoring				
	(g) Establishment of noise zones (work areas)	No			

	(h) Establishment of noise zones (plant)	No			
11	Payment for Health and Safety Representatives at meetings	No			
12	Provision of First Aid Boxes to GSR requirements	No			
13	Transportation of Workers	Lump Sum	1		
14	Submission of a Health and Safety File	Lump Sum	1		
15					
16	16) CONTRACTOR'S CHARGES TO ALLOW				
17					
18					
	TOTAL				

Medical Certificate of Fitness

***Protective Equipment**
e.g. Dust Respirator,
(Light Duty),
Welding
Gloves, etc.

***Job Specific Requirements**
e.g. Operating Mobile Crane, Digging Trenches, Erecting Formwork & Support Work, etc.

e.g. General Worker, Welder, Bricklayer, Steel Fixer, Mobile Crane Operator, etc.

I certify that I have, by examination and testing, using the above criteria specified by the employer, satisfied myself that the above mentioned employee is fit to perform the duties as described by the employer in the matric above.

Occupational Medicine Practitioner / Occupational Health Nursing Practitioner: (Please Print Name:

Signature:
Address:

~~Practice~~
Number:

Date _____

ANNEXURE J

DESIGN HAZARD IDENTIFICATION AND RISK ASSESSMENT										Low	Med	High
Risk Rating Multiplier: Low = 1; Medium = 2; High = 3										1	4	12
Baseline Raw Design Risk - Typical behaviour given the design / factors present										2	6	18
Residual Risk - The extra factors noted that must be in place to reduce the risk										3	8	27
Low Risk - Does not mean that the activity is safe, or that potential injuries and / or fatalities are eliminated Key Risks will be assessed and reported on in the Site Specific H&S Specification												
New tasks require re-assessment as the project progresses												
GAR GSR SANS SABS NIHL GMR OHS Act SWP MS HCS PrDP	General Administration Regulations General Safety Regulations South African National Standards South African Bureau of Standards Noise Induced Hearing Loss General Machinery Regulations Occupational Health and Safety Act and Regulations 85 of 1993 Safe Work Procedures TMS Hazardous Chemical Substances Professional Driving Permit	Baseline Raw Design Risk				Residual Risk						
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category

SERIES 1000 - GENERAL REQUIREMENTS AND PROVISIONS

1202	ServicesEskom, Telkom lines, underground water, and sewage. Telkom and Eskom will remove own services where required.	Yes	PC will expose and protect services. May be illegal connectionsAsbestos pipes	2	2	2	8	Competent supervision and adequate pre-task training will be requiredRemoval of asbestos pipe to be according to the Asbestos RegulationsAll excavations open longer than 1 shift are to be demarcated with netting or similar, at least 1m from the edge of the excavation. MS and SWP are required for the exposure of services, and are to be approved by the ER prior to commencing the activity	2	2	1	4
1219	Water	Yes	All water will be treated as contaminated and maybe unfit for human consumption Potable water is available in the towns and rural water schemes are available for use. Alternate water sources/supplies will have to be approved by DWA	3	2	2	12	Treatment of contaminated water will be required, water testing will take place regularly. Tankers of water may be required to be brought in from other sources	3	2	1	6
1302	Construction plant workshops and camps to be established and maintained by the contractor for the duration of the contract	Yes	A number of camps may be established and maintained for various activities to construct what is required to undertake the works	2	3	3	18	The PC will be required to submit with his pre-tender H&S plan the TMS, risk assessments and supporting documentation to ensure overall activities are managed.	2	3	2	12
1402	Offices and Laboratories	Yes	Offices required for staffand a Laboratory for onsite testing	2	3	3	18	All buildings to be to SANS requirements and according to specifications in the tender document	2	3	2	12

1403	Housing	Yes	Housing for the Employer's Agents employees who operate the laboratory	2	3	3	18	All buildings to be to SANS requirements and according to specifications in the tender document	2	3	1	6
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1404	Electricity, Telkom, Water, Sewerage, Gas and Sanitation	Yes	Depends on the site chosen by the PC. May be septic tanks and or French drainage system. Temporary chemical toilets for use by workers Local or imported water supply, ESKOM, Telkom and gas supply River water is to be treated as contaminated, and workers may well be exposed when working around bridges and culverts	2	3	2	12	The ECO to provide the requirements relative to sanitary requirements on site. The PC will be required to submit with his pre- tender H&S plan the TMS, risk assessments and other supporting documentation to ensure start up activities are adequately managed. Please ensure adequate servicing of portable toilets in the very hot months, as the chemicals deteriorate more rapidly. Formaldehyde is used in the portable toilets	2	3	1	6
1502(a)	Traffic Safety	Yes	The whole site will require traffic accommodation All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	3	2	18
1502(b)(f)	Temporary deviations	Yes	All deviations and temporary by-passes are to be approved by the RE	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same.	3	2	1	6

1502(e)(h)	Are there specific concerns regarding public access?	Yes	Taxi /Bus stops and access to private property will be affected	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Allowance will be made for access to private property	3	3	2	18
1502(i)	Traffic Safety Officer (TSO) will be appointed?	Yes	A team with at least 1 TSO to manage the traffic safety on site	3	3	3	27	Adequate competent TSO's to be appointed. TSO shall not be H&S Officer	3	3	2	18

1503(a)	Construction will be under traffic?	Yes	Construction in half widths and single lane closures will be used for the project (24 hr) Stop/Go required	3	3	3	27	Traffic safety teams to maintain 24 hour closures, construction drawings to be provided, all accommodation in line with SARTSM Ch 13 Vol 2. Stop/Go controllers are not to exceed specified shift hours	3	3	2	18
1503(b)	Erection of signage	Yes	Digging of holes and mounting of signs on poles, planting of poles, use of lifting equipment	3	3	3	27	PPE, Method Statement, Training, Lifting equipment to be certified as per DMR and other requirements of the OHS Act	3	3	2	18
1511	Dust from vehicles on the road	Yes	Dust suppression to be carried out in built areas and where employees are working and to improve driving visibility	3	3	3	27	Water tankers to spray roads as and when required	3	3	2	18
1700	Clearing and Grubbing	Yes	All Material to be stock piled for further use. Conservation of top soil	3	3	3	27	Permission from the Employer's Agent for the disposal of materials TMS and Environmental approval	3	3	2	18
SERIES 2000 - DRAINAGE												
2100	Drains	Yes	Open earth drains, Banks and dykes and sub-soil drains	2	2	2	8	Trenches kept to a minimum depth/ Excavations checked on a daily basis by competent person TMS, Risk Assessments, PPE	2	2	1	4
2200	Prefabricated culverts	Yes	Where insitu casting is not preferred	2	2	2	8	Prefabricated culverts are to be to design specification. PPE, moving of castings with lifting equipment, Method Statement and Risk Assessment	2	2	1	4

2300	Concrete kerbing, concrete channelling, chutes and down pipes and concrete linings for open drains	Yes	Pre-cast kerbs, insitue concrete pavement construction in rural areas	2	2	2	8	Trenches kept to a minimum depth/ Excavations checked on a daily basis by competent person TMS and SWP	2	2	1	4
SERIES 3000 - EARTHWORKS AND PAVEMENT LAYERS OF GRAVEL OR CRUSHED STONE												

3400	Pavements	Yes	Excavation, compaction and placement of pavement	3	2	2	12	Alternative safe pedestrian passage is required where pavements are under construction TMS and SWP required	3	2	1	6
SERIES 4000 - ASPHALT PAVEMENTS AND SEALS												
N/A												
SERIES 5000 - ANCILLARY WORKS												
5100	Stonework	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	TMS and SWP required PPE, DD Green gloves	3	3	2	18
5200	Gabions	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	TMS and SWP required PPE, DD Green gloves	3	3	2	18
5400	Guardrails	Yes	Working on roadway while open to the traffic. PPE required and traffic control Steep drop offs	3	3	3	27	TMS and SWP required Workers are to be issued with DD Green gloves, PPE,	3	3	2	18
5600/5700	Road signs & markings	Yes	Manual labour on roadway while open to traffic Use of crane truck - Use of ladders	3	3	3	27	Competent contractor should be employed for this task Inspections of equipment and inspector of equipment to be appointed Load test of equipment required Approved traffic control and daily plans	3	3	2	18
5800	Landscaping	Yes	Use of chemicals and manual labour Poisons, Phosphates and Herbicides	3	3	3	27	TMS and SWP required SDS's, PPE and training	3	3	2	18
SERIES 6000 - STRUCTURES												
6100	Foundations	Yes	Transportation of material to site Excavations, Structures and culverts	3	3	3	27	TMS, SWP Operators to be competent	3	3	2	18

6200	Formwork	Yes	Manual construction of formwork Shutter oil Manual labour	2	3	2	12	All formwork to be inspected and certified TMS, SWP, Training and SDS's	2	3	2	12
6300	Steel reinforcement	Yes	Steel fixing	3	3	3	27	Training, TMS, medical surveillance and working at height	3	3	2	18

6400	Concrete	Yes	Precast lintels, beams and culverts Batch plant and pouring	3	3	3	27	Mixing and Transportation is to be conducted with compliance to all safety and road regulations All operators to be competent in their specific operations	3	3	2	18
SERIES 7000 - SUNDRY STRUCTURES												
7100	Concrete Pavements	Yes	Excavations, compacting and pouring of concrete	3	3	3	27	TMS, SWP, PPE, Specialised personnel	3	3	1	9
7400	Earth retaining systems	Yes	Retainer walls and Gabions	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
F1200	Concrete extensions	Yes	Some bridges and culverts will be lengthened and widened	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
OHS SPECIFICATIONS												
OHS Specification	Weather	Yes	High as well as low temperatures as well as humidity will be encountered	3	3	3	27	Weather station to monitor weather conditions	2	3	2	12
	Labour	Yes	Local labour as well as SMME's will be used	3	3	3	27	Local labour to have a medical. SMME's to produce H&S Plans before commencement of work on site	2	3	2	12
	All materials will be considered containing Silica	Yes	Risk Assessments, medical surveillance and chest x-rays for all workers and operators	3	3	3	27	PC is to ensure compliance and medical surveillance is adequately managed	3	3	2	18
	Crane Work	Yes	Cranes could be used to position bridge beams and / or culverts	3	3	3	27	Certified contractor, TMS, certified operators	3	2	1	6

Transportation	Yes	Vehicles will be used on entire project	3	3	3	27	All operators to have a valid licence, PrDP (P.G.D.) Certificate of competence and a valid medical certificate issued by an Occupational Health Practitioner Vehicles to have amber flashing lights, reverse warning hooters and daily check checks	3	3	2	18
Transportation	Yes	All vehicles to be identified as Construction Vehicles	3	3	3	27	Amber flashing lights, licensed competent operators	3	3	2	18

Lifting Equipment	Yes	Lifting equipment will be used on the project	3	3	3	27	All lifting equipment is to be on a register All equipment to be tested according to DMR 18	2	3	1	6
Fire Fighting Equipment	Yes	Fire fighting equipment will be used on site	2	3	2	12	All fire fighting equipment to be recorded and tested according to SANS 1475	3	3	1	9
First Aid Equipment	Yes	First Aid equipment will be used on site	3	3	3	27	All first aid equipment to be recorded and checked according to OHS Act GSR 3 Rural area and availability to emergency services is to be taken into account. Injuries resulting from the type of operations are to be taken into consideration for the provision of first aid equipment	3	3	1	9
Hazardous Chemicals	Yes	Flammable materials	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
	Yes	Petrol	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
	Yes	Diesel	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
	Yes	Lubricants	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
	Yes	Cement & cement bags	3	3	2	18	PPE, Method Statement, Training, Medicals and Induction and rotation of workers	3	3	1	9
	Yes	Road marking paints	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12

	Yes	Portable toilets	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
	Yes	Grouts	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	2	3	2	12
	Yes	Herbicides and ant poisons	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	2	3	2	12
	Yes	Superphosphate fertilizers	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	2	3	2	12
	Yes	Limestone Ammonium Nitrate fertilizer	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	2	3	2	12
	Yes	Formula 2:3:2 fertilizer	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	2	3	2	12
	Yes	Shutter oils	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	3	2	18
	Yes	Additives for concrete	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	3	2	18

SECTION D: HIV/AIDS AWARENESS EDUCATION**TABLE OF CONTENTS**

D1	SCOPE
D2	DEFINITIONS AND ABBREVIATIONS
D3	BASIC METHOD REQUIREMENT
D4	HIV/ AIDS AWARENESS EDUCATION AND TRAINING
D5	PROVIDING WORKERS WITH ACCESS TO CONDOMS
D6	ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)
D7	APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION
D8	MONITORING
D9	REPORTING
D10	MEASUREMENT AND PAYMENT

D1 SCOPE

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

- (a) Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers.
- (b) Informing Workers of their rights with regard to HIV/AIDS in the workplace.
- (c) Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices.

D2 DEFINITIONS AND ABBREVIATIONS

D2.1 Definitions

Service Provider: The natural or juristic person recognised and approved by the National Department of Public Works as a specialist in conducting HIV/AIDS awareness programmes.

Service Provider Workshop Plan: A plan outlining the content, process and schedule of the training and education workshops, presented by a Service Provider which has been approved by the Representative/Agent.

Worker: Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in all.

Representative / Agent: The Employer's Agent as defined in the Contract Data.

D2.2 Abbreviations

HIV : Human Immunodeficiency Virus
 AIDS : Acquired Immune Deficiency Syndrome STI
 : Sexually Transmitted Infection

D3 BASIC METHOD REQUIREMENT

The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.

The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regard to HIV/AIDS awareness.

The Service Provider Workshop Plan shall be based on the following information provided by the Contractor:

- (a) Number of Workers and Sub-contractors on site.
- (b) When new Workers or Sub-contractors will join the construction project.
- (c) Duration of Workers and Sub-contractors on site.

- (d) How the maximum number of Workers can be targeted with workshops.
- (e) How the Contractor prefers workshops to be scheduled, e.g. three hourly sessions per Worker, or one 2.5 hour workshop per Worker.
- (f) Profile of Workers, including educational level, age and gender (if available)
- (g) Preferred time of day or month to conduct workshops.
- (h) A Gantt chart reflecting the construction programme, for scheduling of workshops.
- (i) Suitable venues for workshops.

The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the commencement date. After approval by the Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training

The Service Provider Workshop Plan shall address, but will not be limited to the following:

- (a) The nature of the disease;
- (b) How it is transmitted;
- (c) Safe sexual behaviour;
- (d) Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- (e) Attitudes towards other people with HIV/AIDS;
- (f) Rights of the Worker in the workplace;
- (g) How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;
- (h) How the Service Provider will support the Awareness Champion;
- (i) Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- (j) How the workshops will be presented, including frequency and duration;
- (k) How the workshops will fit in with the construction programme;
- (l) How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- (m) How the video will be used;
- (n) How the Service Provider will elicit maximum participation from the Workers;
- (o) A questions and answers slot (interactive session)

The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated.

D4 HIV/ AIDS AWARENESS EDUCATION AND TRAINING
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D4.1 Workshops

The Contractor shall ensure that all Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan.

A video of HIV/AIDS in the construction industry, which can be obtained from all Regional Offices of the National Department of Public Works, is to be screened to Workers at workshops. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

D4.2 Recommended practice

D4.2.1 Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan. Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a following session.

D4.2.2 Service Providers

A database of recommended Service Providers is available from all Regional Offices of the National Department of Public Works.

D4.2.3 HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met.

(a) UNIT 1: The nature of HIV/AIDS

After studying and understanding this unit, the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:

- (i) Define and describe HIV and AIDS.
- (ii) List and describe the progression of HIV/AIDS.

(b) UNIT 2: Transmission of the HI virus

After studying and understanding this unit, the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:

- (i) Record in what bodily fluids the HI virus can be found.
- (ii) Describe how HIV/AIDS can be transmitted.
- (iii) Demonstrate the ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS.

(c) UNIT 3: HIV/AIDS preventative measures

After studying and understanding this unit, the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HI virus from entering the bloodstream

Assessment Criteria:

- (i) Report on how to minimise the risk of HIV/AIDS infection.
- (ii) Report on precautions that can be taken to prevent HIV/AIDS infection.
- (iii) Explain or demonstrate how to use a male and female condom.

- (iv) List the factors that could jeopardize the safety of condoms provided against HIV/AIDS transmission.

(d) UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit, the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling

Assessment Criteria:

- (i) Describe methods of testing for HIV/AIDS infection.
- (ii) Report on why voluntary testing is important.
- (iii) Report on why pre- and post-test counselling is important.

(e) UNIT 5: Living with HIV/AIDS

After studying and understanding this unit, the Worker will be able to recognise the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS

Assessment Criteria:

- (i) List and describe ways to manage HIV/AIDS.
- (ii) Describe nutritional needs of people living with HIV/AIDS.
- (iii) Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS.
- (iv) Explain the need for counselling and support to people living with HIV/AIDS.

(f) UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit, the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people.

Assessment Criteria:

- (i) Discuss anti-retroviral therapy.
- (ii) List methods of treatment to prevent HIV/AIDS transmission from mother-to-child.
- (iii) Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS.
- (iv) Describe post exposure prophylactics.

(g) UNIT 7: The rights and responsibilities of Workers in the workplace with regard to HIV/AIDS

After studying and understanding this unit, the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non-discriminative way.

Assessment Criteria:

- (i) Discuss the rights of a person living with HIV/AIDS in the workplace.
- (ii) Discuss the responsibilities of a person living with HIV/AIDS in the workplace.
- (iii) Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important.

D4.3 Displaying of plastic laminated posters and distribution of information booklets

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from all Regional Offices of the Department of Public Works

The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STIs

Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover

Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds

The posters on display must always be intact, clear and readable

Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site

D5 PROVIDING WORKERS WITH ACCESS TO CONDOMS

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SABS ISO 4074, available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the Department of Health.

At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover

Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds

D ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

D7 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.

The Awareness Champion shall be responsible for:

- (a) Liaising with the Service Provider on organising awareness workshops;
- (b) Filling condom dispensers and monitoring condom distribution;
- (c) Handing out information booklets;
- (d) Placing and maintaining posters

D8 MONITORING

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract.

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent.

D9 REPORTING

D9.1 The contractor shall prepare and attach to his claims for payment a compliance report which outlines how the actions taken by the contractor in the period for which payment is claimed comply with the requirements, and a schedule which lists the names, identity numbers, trade/occupation and the name of the employer of all the construction workers exposed to the programme (refer Annexure A for a pro-forma for the report).

D9.2 The employer shall certify the report and schedule described in D9.1 whenever a claim for payment is issued to the employer.

NOTE: In the event that the contractor fails to comply with the requirements of D9, the employer may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty.

D10 MEASUREMENT AND PAYMENT

Payment items to cover the contractor's cost related to the HIV/AIDS Awareness Education are included in the bill of quantities. These items are described under Section 1200 in Section B : Matters Relating to the Standard Specifications of the Works Specification.

Add the following pay items:

Item	Unit
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B12.09 HIV/AIDS AWARENESS TRAINING

- | | |
|---|----------------|
| a) HIV/AIDS awareness training | (Prov Sum) |
| b) Handling cost and profit in respect of sub-item B12.109(a) | percentage (%) |
| c) Training Venue | Prov Sum |
| d) Handling cost and profit in respect of sub-item B12.09(c) | percentage (%) |

The stated Provisional Sum's shall be expanded only as ordered and approved by the Employer's Agent.

The percentage tendered for handling costs and charges shall cover all additional costs for the Contractor over and above the sums paid under Sub Item (a and c).

SECTION E: LABOUR SPECIFICATIONS

SECTION E: LABOUR

This part of the project Specifications contains comprehensive additional specifications for matters not covered by and work which is not carried out in terms of the Standard Specifications.

The number of each clause and each payment item in this part of the Project Specification is prefixed with an E to differentiate these clauses and items as additional works.

The following additional specifications are covered under this part of the Scope of Work:

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	E1 EMPLOYMENT OF LOCAL LABOUR AND TRAINING REQUIREMENTS
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E1.1 SCOPE

The specification sets out the requirements relating to the employment of local labour by involving the community through the established structures as well as the training requirements for these labourers.

E1.2 DEFINITIONS

The definitions given in the conditions of contract, the Contract Data and the Works specifications, together with the following additional definitions shall, unless the context dictates otherwise, apply:

‘Key Personnel’ means all contract managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators and the like, and all other personnel in the permanent employ of the Contractor or subcontractor who possess special skills and/or who play key roles in the Contractor’s or subcontractor’s operation.

‘Labourer’ means a worker statutorily defined as employees in the Basic Conditions of Employment Act, 1997, who is temporarily or permanently employed by the Contractor and subcontractors to perform prescribed work on this Contract. ‘Labour’ means labourers or workers.

‘Labour Register’ means the list of available Local Labourers compiled by the Project Liaison Officer (PLO) in co-operation with the Project Liaison Committee (PLC) in accordance with the results of their negotiations with the Contractor and the Local Community subsequent to the awarding of the Contract.

‘Local Labourer’ means a worker who is normally permanently residing in the target area(s) as defined by the Employer in the Works Specifications and who is available to be temporarily employed by the Contractor and subcontractors to perform prescribed tasks that form part of the Works.

‘Targeted Labour’ means the Local Labourers, who are defined as the target group for the Contract as normally permanently residing in the target area(s) as defined by the Employer in the Works Specifications. It is incumbent on individuals defined as Target Labour to demonstrate their claims to such residency on the basis of identification and association with and recognition by members of the community residing within the target area. It is incumbent on individuals to provide evidence of qualifying for the target groups.

‘Worker’ for the purposes of this specification means any person, not being one of the Contractor’s key personnel, nor any key personnel of any subcontractor, who is engaged by the Contractor, a subcontractor or the Employer and paid on an hourly paid basis to participate in the execution of any part of the contract works and shall include unskilled labour, semi-skilled and skilled labour, artisans, clerical workers and the like.

‘Workforce’ means the aggregate body comprising of all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all subcontractors.

E1.3 ENGAGEMENT OF LOCAL LABOUR

The temporary workforce shall, as far as practically possible, and with the exception of key personnel, be recruited/selected from the local communities living in close proximity to the project.

Prior to the award of the Contract, the Employer shall, at his own cost, take all necessary actions to advertise within the local communities of the fact that the Contract will provide temporary employment opportunities and preference will be given to the use of the Local Labour on this Contract. Labourers and workers of the local community required by the Contractor shall be recruited/chosen from a Labour Register and appointed for work to enable the Contractor to comply with the specific minimum target value set for the Local Labour Goal (LLG) for the Contract. Labourers and workers of the Local community who are engaged by other employers, other sub-Contractors in paid positions of employment shall not be eligible for inclusion on the Labour Register.

E1.3.1 Employment of Local Labourers

Upon the award of the Contract the Contractor shall without delay consult with the Project Liaison Committee (PLC), the Employer's Agent and the Employer, and appoint a Project Liaison Officer (PLO) from a shortlist provided by the PLC, if so instructed, who is mutually acceptable to all parties. The Project Liaison Officer shall negotiate with the Contractor and the PLC and compile the required list of available Local Labourers called the Labour Register (Labour Desk).

The Contractor shall select and appoint temporary contract workers required for work included in the Contract from the available Local Labourers listed in the Labour Register with due observance of the skills required for the work in question.

E1.3.2 Selection of Local Labourers

The Contractor shall advise the PLO and the PLC in writing of the various categories of Local Labourers required for construction and the number of Local Labourers required in each category, together with the personal attributes which he considers desirable that each category of Local Labourers shall possess, taking due cognisance of the provisions of the Contract relating to Training.

The Contractor shall make his selection of Local Labourers from the applicants in the Labour Register, taking due cognisance of his requirements for the workforce and the provisions of the Contract in regard of the provision of Training to the workforce and in accordance with the following principles:

- (a) No potential Local Labourer shall be precluded from being employed by the Contractor on the execution of the Works by virtue of his lack of skill in any suitable operation forming part of the Works unless:
 - (i) All available vacancies have been or can be filled by labourers who already possess suitable skills; or
 - (ii) The completion period allowed in the Contract, or the remaining portion of the Contract period (as the case may be) is sufficient to facilitate the creation of the necessary skills;
- (c) Preference shall be given to the long-term and single heads of households;
- (d) The Contractor shall, in so far as is reasonably practicable, accommodate the applicant's expressed preferences regarding the types of work for which they are selected;
- (e) The selection process shall make provision for, but shall not be limited to, the inclusion in the Labour Register of disabled Local Labourers who are deemed capable to perform selected tasks, youths who are older than sixteen but not older than thirty five years and women.

After making his selection, the Contractor shall advise the PLO and the Employer's Agent thereof in writing, and the Employer's Agent, with the assistance of the PLO has the right to call a meeting with PLC and the Local Community for the purpose of ratifying the Contractor's selection. The Contractor shall attend such meeting and where reasonably required, shall motivate his selection. Should the Employer's Agent or the Local Community make reasonable objection to the selection of any particular applicant by the Contractor, the Contractor shall not employ such applicant and shall select another suitable applicant acceptable to the Employer's Agent and the Local Community as a replacement of the rejected applicant, in order to finalize the composition of the workforce.

The provisions this clause shall also apply in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time for the execution and completion of the Works.

E1.4 CONTRACTUAL REQUIREMENTS

E1.4.1 Legislation

The onus shall be on the Contractor to ensure that all statutory requirements applicable to the employment of Labour are observed.

E1.4.2 Labour content

The Labour Content (LC) of the Contract shall be determined as follows:

LC = total value of wages, allowances and costs paid to local labourers, including those employed by subContractors and selected subContractors.

The total Rand value of the Labour Content, expressed as a percentage of the total Award Value (Contract Price exclusive of VAT, and allowances for contingencies and escalation), shall be defined as the Labour Content Percentage or the local labour goal as stated in Part C4. .E1.4.3 Targeted labour

The targeted labour shall be as specified above. The definitions, provisions and specifications of the South African National Standard Specification SANS1914-52002, Targeted Construction Procurement : Part 5 : Participation of Targeted Labour will apply to this contract. Should there however be conflict between SANS1914-5:2002 and the Works Specification, the latter shall take precedence and prevail.

The Contractor shall engage targeted labour directly in the execution of the Works to the extent that the monetary value (Labour Content) of such engagement, expressed as a percentage of the Award Value (Contract Price exclusive of VAT, Provisional Sums, Prime Cost Sums and allowances for contingencies and escalation), is not less than that specified in Part C 4.of this tender document.

E1.4.4 Records and reporting

The Contractor shall maintain accurate and comprehensive records of all local labourers engaged on the contract. Forms 1 to 3 (of which pro formas are included in Part C1: Agreements and Contract Data) shall be completed and submitted to the Employer's Agent at the end of each month, from the Commencement date up to the completion of the Contract. Form 3 may be substituted by the use of electronic banking records provided that the system can be audited.

The completed forms shall accompany the Contractor's monthly claim presented to the Employer's Agent for payment of certified completed work. The Employer reserves the right to delay payments due to the Contractor should the Contractor fail to provide any item of required documentation to the approval of the Employer's Agent.

The Contractor's Labour Content performance will be measured at the end of each month in order to monitor the extent to which he is striving to reach the Local Labour Goal specified in Part A of the Works Specification.

The Contractor shall, on completion of the contract, and as a pre-requisite event to the release of any retention money in terms of the conditions of contract, provide the Employer's Agent with independently audited documentary evidence of the total actually paid to the workforce and the number of workers days generated during the contract.

E1.4.5 SANCTIONS

In the event that the Contractor fails to substantiate that any failure to achieve the Local Labour Goal was due to quantitative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor shall be liable to pay to the Employer a financial penalty (P) calculated in accordance with the following formula:

$$P = 1,30 \times (LM - LA) \times VA.$$

Where:

P = Rand value of penalty payable.

VA = Award value (Contract Price exclusive of VAT, and allowances for contingencies and escalation)

LM = Local Labour Goal % stated in the Project Document

LA = The local labour component % which the Employer's Representative certifies as being achieved upon completion of the contract.

E1.5 PROJECT LIAISON COMMITTEE

When required a Project Liaison Committee (PLC) shall be established to manage the project, consisting of members elected from each of the wards along the project road. The Contractor will have one senior member of his staff as representative on the PLC without any voting powers.

The Contractor will report all progress, deviations from the Contract, deviations from the programme, labour related matters, and financial progress to the PLC.

The PLC will act as liaison channel between the Contractor and the community. The PLC will assist the Contractor in identifying and recruiting local labour for the project.

The Contractor shall hold meetings with the PLC on a regular basis (at least once per month but not more than twice per month) to ensure that the PLC is informed and aware of progress and problems that may arise.

Allowance is made for the payment of subsistence/travel allowances to the members of the PLC attending meetings with the Contractor, by the Contractor in the Schedule of Quantities.

E1.6 PROJECT LIAISON OFFICER**E1.6.1 Appointment**

The Contractor shall appoint a Project Liaison Officer (PLO) after consultation with the Project Liaison Committee (PLC), the Employer's Agent and the Employer, as a link between the PLC and the Contractor. The Project Liaison Officer shall be nominated by the PLC and shall be appointed as a member of the Contractor's management personnel and the Contractor's normal employment conditions shall be applicable to the appointment. The Contractor shall disclose his normal employment conditions to the Employer's Agent when called upon to do so.

E1.6.2 Duties of the Project Liaison Officer

The Project Liaison Officer shall:

- (a) be available on Site daily between the hours agreed on by the Contractor, the Employer and the Employer's Agent from time to time;
- (b) assist the Contractor in the identification of suitable trainees and shall attend one of each of the training sessions;
- (c) communicate with the Contractor and the Employer's Agent to determine the labour requirements with regard to the numbers and skills;
- (d) assist in maintaining good labour relations, and when applicable partake in Labourers' grievances and dispute procedures;
- (e) assist in and facilitate the recruitment of suitable temporary labour and the establishment of the Labour Register (Labour Desk);
- (f) attend all meetings in which the Local Community and/or Labourers are present or are required to be represented;
- (g) assist in the identification, and screening of Labourers from the Local Community in accordance with the Contractor's requirements;
- (h) inform temporary Labourers of their conditions of temporary employment, and inform temporary Labourers as early as possible when their period of employment will be terminated;
- (i) attend disciplinary proceedings to ensure that hearings are fair and reasonable;
- (j) keep a daily written record of his interviews and community liaison activities;
- (k) carry out specific tasks ordered by the Employer's Agent;
- (l) perform such other duties as required and agreed upon between all parties concerned.

E1.6.3 Remuneration

The remuneration of the Project Liaison Officer shall be determined jointly by the Contractor, Employer's Agent and the Employer. A Provisional Sum is provided in the Schedule of Quantities to cover the remuneration of the Project Liaison Officer.

The Project Liaison Officer shall only be employed and paid for the period in which the duties of a Project Liaison Officer are required as agreed on by the Employer's Agent and the Contractor.

E1.6.4 Transport of the Project Liaison Officer

The Contractor shall provide transport for the Project Liaison Officer as agreed upon between the Employer, the Employer's Agent and the Contractor.

A Provisional Sum is provided in the Bill of Quantities to cover the provision of transport for the Project Liaison Officer.

E1.7 TRAINING REQUIREMENTS

Where training is specified in the Contract, the Contractor shall implement a formal training programme in which the various skills required for the execution and completion of the works are imparted to the workers, and where applicable, subContractors engaged therein, in a programmed and progressive manner. Workers shall be trained progressively throughout the duration of the contract in the various stages of a particular type of work.

All Training shall take place during normal working hours and the Contractor shall make adequate allowance in his programme of work to accommodate the Training to be provided in terms of the Contract and shall ensure that the workers are available at the appropriate times to undergo such Training.

The Contractor shall submit with his tender full details of the formal training which he intends to implement on the Contract. Details of the proposed Training shall be provided on Schedule of Proposed Training in the: Returnable Schedules and shall include the following:

- (i) The name of the training institution and course programme.
- (ii) Each type of training and course content synopsis.
- (iii) The manner in which the training is to be delivered.

The cost of the Training in accordance with the Contractor's Schedule of Proposed Training programme shall not exceed the sums provided for Training in the relevant pay items in the Bill / Schedule of Quantities.

The Contractor's Training schedule shall be subject to the approval of the Employer's Agent, and the Contractor shall, if so instructed by the Employer's Agent, alter or amend the Training schedule and its contents to suit changing conditions on the Site and changes in the Contractor's programme of work.

E1.7.1 Training of Local Labourers

Depending on the requirements of the Contract the Training shall make provision for on-site hands-on Training, courses presented in-house by the Contractor, and selected courses presented by institutions accredited by the Construction, Education and Training Authority (CETA) or other institution recognized by the Department of Labour and the Employer.

Each Labourer shall receive basic instructions and on-site hands-on training for the category of work required to be executed by him/her.

An approved number of Local Labourers chosen by the Contractor in conjunction with the Employer's Agent shall attend in-house courses conducted by trainers in the employ of the Contractor in accordance with the approved Training programme to satisfy the need for trained Labourers on the Site.

Where formal accredited training is specified in the Contract, Local Labourers with the required aptitude shall be nominated by the Contractor, and subject to the approval of the Employer's Agent, shall attend approved formal training courses presented by accredited institutions and considered essential for the execution of the Works.

For this purpose the Contractor shall submit a selection of courses from known training institutions accredited by the Construction, Education and Training Authority (CETA) or other institution recognized by the Department of Labour and the Employer from which the Employer's Agent will choose the courses to be attended by the nominated and approval Local Labourers.

E1.7.2 Training for Emerging Contractors (SMME's)

The Contractor shall closely monitor the performance of the principals of Emerging Contractors (SMME's), the execution of their subcontracts and shall identify those who, in his opinion, display the potential to benefit from formal Training provided for in the Contract, and when required by the Employer's Agent, the Contractor shall make recommendations in this regard. The final list of candidates will be decided on between the Contractor and the Employer's Agent.

Where required, Emerging Contractors engaged by the Contractor shall receive training and guidance according to an approved formal training programme which comprises both management skills and business development skills.

The Contractor shall, when requested provide full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost.

If so indicated, the Contractor shall alter or amend the formal training programme and its contents to suit changing conditions on Site and changes in the Contractor's programme of work.

E1.7.3 Labourers remunerated during training

All Local Labourers employed by the Contractor shall be remunerated in respect of the time spent undergoing formal training. Payment for Labourers in respect of training periods during which no productive work is executed, shall be reimbursed to the Contractor as provided for in the Bill / Schedule of Quantities.

E1.7.4 Non-compliance

If at any stage the Employer's Agent notifies the Contractor in writing that the Contractor is not complying with the requirements of the Contract in respect of the training to be provided to Local and other Labourers and to the Emerging Contractors, then the Employer is entitled to appoint competent firms or persons to conduct the specified training at the Contractor's expense and the amounts paid to such firms or persons will be deducted from the Contractor's payment.

The Contractor shall be obliged to make Local Labourers and other employees available for Training when so required by the Employer's Agent.

E1.8 FORMAL TRAINING

E1.8.1 General

The formal skills training programme to be implemented by the Contractor shall comply with the following minimum standards:

- (a) Be accredited by the Construction, Education and Training Authority (CETA) or other institution recognized by the Department of Labour, as being appropriate for this project.
- (b) Be delivered by suitably qualified and experienced trainers accredited to do so.
- (c) Be delivered in the modules as described by an authorized Training Centre. The modules listed are those considered applicable to most civil Employer's Agenting projects and shall serve as a guide only for planning purposes. The actual training needs, training agency and programme shall be agreed with the Employer's Agent prior to implementation.

The Contractor shall be responsible for the provision of everything necessary for the delivery of the skills training programme, including the following:

- (i) Sufficient skilled, competent and accredited trainers to deliver the training programme to all workers in accordance with the training programme;
- (ii) A suitably furnished venue (if required)
- (iii) Transport to and from the works (as necessary)
- (iv) Tools, equipment and teaching aids;
- (v) Stationery and all other necessary materials

All members of the workforce will initially receive training in the module. Road safety for construction workers followed by training in the various work activity modules depending on the activities for which they will be employed. Each worker employed must be given the opportunity of completing at least one of the work activity modules during the initial training period, with further training being given on merit.

The Contractor shall keep comprehensive records of the training given to each worker as well as the nature and number of work tasks executed by the worker and whenever required shall provide copies of such records to the Employer's Agent.

The Contractor shall in so far as it is reasonable and practical taking due and cognisance of the nature of the works to be executed at any given time, use training workers on those aspects of the works for which they have been trained.

E1.8.2 Accredited training and attendance

Only qualified trainers employed by training agencies that are accredited by the Construction, Education and Training Authority (CETA), or other institution recognized by the Department of Labour shall deliver all training. Accredited training referred to both the trainers as well as to the training material. Certificates affirming the successful participation in the various courses shall be presented to each attendant.

The Contractor shall facilitate in the delivery of training by instructing and motivating the hired local Labour, supervisors and subcontractors regarding attendance and participation.

All training shall take place within normal working hours or as agreed with the trainees.

E1.8.3 Supervisors

Attention shall be given to the formal and informal training of supervisors.

Candidates having the potential to become supervisors shall be selected from amongst the workforce and be given additional formal and informal training as outlined above. This selection will take place only once the initial skills training have been completed and workers have been given sufficient opportunity to prove their worth.

E1.8.4 Training records and certificates

The Contractor shall keep comprehensive records of the formal training given to each Labourer and principal of the Emerging Contractor and whenever required shall provide copies of such records to the Employer's Agent. At the successful completion of each course, each participant shall be issued with certificate indicating the course contents as proof of attendance and completion.

E1.8.5 Labour / Training Agent

If specified in the Contract, the Contractor shall appoint a Labour / Training Agent, subject to the written approval of the Employer's Agent. The Labour / Training Agent shall be on the Site at all times when Local and other Labourers are executing work allocated to them.

The labour / Training Agent shall report in writing to the Employer's Agent on a daily basis on the work executed by the Local and other Labourers in the employ of the Contractor, the quality of the work the progress and all other information that the Employer's Agent may require. The Labour / Training Agent shall also be responsible for those aspects of training which are assigned to him the Contract.

E1.8.6 Training centre

If so specified in the Contract a suitable on site Training centre shall be provided by the Contractor to the satisfaction of the Employer's Agent. The Training centre shall comply with the specifications for site offices as specified in the Specifications Measurement and payment of the Training centre and the required equipment shall be as specified in the Project Specification.

CONTRACT
PART 4: SITE INFORMATION

PART C4: SITE AND PROJECT

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C4.1 MISCELLANEOUS

The works specifications form an integral part of the contract documents and shall be deemed to supplement, the Standard Specifications.

In the event of any discrepancy or conflict with any part or parts of the Standard Specifications, the Bill of Quantities or the Drawings, the Works Specifications shall take precedence.

The Standard Specifications which form part of this Contract have been written to cover all phases of work normally required for road contracts and they may therefore cover items not applicable to this particular contract.

C4.2 EMPLOYER'S OBJECTIVES

The Employer's objectives are to deliver public infrastructure located within the boundary of the Local Municipality within the province of the Eastern Cape.

A major objective of the targeted procurement procedure is to extend economic opportunities and entrepreneurial capacity to all localities by the optimum utilisation of the resources existing in the vicinity of project, the development of these resources in the execution of the project, and by maximising the amount of project funds retained within the project locality.

It is also an objective of the Employer to promote the use of local emerging Contractors from the KSD Local Municipal area (and thereafter the OR Tambo District Municipality) who are owned, managed and controlled by previously disadvantaged individuals. To this end, some of the construction operations on this project have been reserved for selected sub- Contractors who are registered with the CIDB with a grading of 3 and lower. It is the Employers objective that a minimum of **20%** of the contract value be subcontracted to SMME contractors.

The Employer has further set goals that a minimum of **5%** of the contract value be expended on local labour, with a minimum of **5%** of the contract value be expended on local resources from within the KSD Local municipal area.

The description of the project contained in the Scope of Work is merely an outline of the Contract Works and shall not limit the work to be carried out by the Contractor under this Contract. Details of some of the major items are given in this section and approximately detailed quantities for each type of work to be carried out in accordance with the Contract Documents are included in the Bill of Quantities.

It is a condition of this contract that the employer reserves the right to limit the expenditure on the works due to possible budget restraints. Should the tender sum exceed the budgeted amount, the scope of the works may be reduced at any time, before or during the contract period, to ensure that the final contract amount does not exceed the budgeted amount.

Should these conditions be applied, such adjustments or limitations shall be deemed to be a variation of the form or quantity of the works or any part thereof in terms of clause 6.3 of the General Conditions of Contract. The validity of the tender, the individual rates or sums tendered shall not be influenced by any such adjustments or limitations and no claim will be considered on the basis of such adjustments or limitations in terms of clause 6.11 of the General Conditions of Contract.

C4.3 OVERVIEW

The existing 850m King Edward Street is in need of rehabilitation to surface standard in order to improve the geometric standards; safety, traffic demand and to provide an improved road to serve the communities. This project is the initial phase in the implementation of surface roads to all the residential streets in KSD.

This document pertains particularly to the construction of Marine Drive and comprises essentially the following:

- a) Mass earthworks and roadbed preparation to the in situ road formation and new formations to improve geometrics and road profiles;
- b) Construct gravel pavement layers including selected layers;
- c) Construction of asphalt surfacing;
- d) Construct deviations and accommodate traffic;
- e) Relocate existing services where required (done by service providers).
- f) Installation of kerbing and paved walkways .
- g) Supply and erection of road signs.
- h) Construction of gabions.
- i) Protection of slopes and the establishment of vegetation.
- j) Training of the local labour and management.
- k) Employment and management of selected Sub –Contractors.
- l) Ancillary works.

The above is merely an overview of the Contract Works and shall in no way limit the work to be carried out by the Contractor.

C4.4 EXTENT OF THE WORKS

C4.4.1 Pavement Design and Materials

C4.4.2.1 Pavement Design

The existing King Edward Street will be scarified / removed and replaced with new and structurally sound material where the existing alignment is followed by the new horizontal alignment. The road will then be built up from the bottom with various selected layers, followed with a G2 base and 30 mm asphalt surfacing provide a 630mm deep pavement structure.

Surfacing	:	30 mm continuously graded asphalt (Surfacing)
Base	:	150 mm G2 (Base)
Upper Subbase	:	150 mm G5 (sub-base)
Upper Selected	:	150mm G7 gravel
In-Situ:		150 mm Rip / Scarify & Re-compact

C4.4.2.2 Availability of material

- (a) All pavement layers and fills

All material to be obtained from commercial sources.

C4.5	MAINTENANCE OF THE EXISTING ROADS
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The Contractor shall be responsible for all routine maintenance operations along the entire length of road reserve, from the date of handing over of the site until the date of issue of the certificate of completion of the works.

Once the certificate of completion of the works has been issued the responsibility for normal maintenance of the road (e.g. collection of litter, clearing of drains, repair of road signs damaged by the public, etc.) shall revert to the KSD Municipality.

C4.6	SERVICES
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Eskom and Telkom will be responsible for the relocation of all the electrical and telecommunication services under their control while the Contractor will be responsible for the relocation and / or protection of all other services.

C4.7	DRAWINGS
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The reduced drawings that form part of the tender document shall be used for tender purposes only.

The Contractor will be supplied with one (1) paper copy of each of the drawings for construction as well as an electrical pdf copy. These paper copies are issued free of charge and the Contractor shall only be provided additional copies on request and for his account.

Any information in the possession of the Contractor, which the Client's Agent's representative requires for completing his as-built drawings, shall be supplied to the Client's Agent's representative before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Client's Agent. The Client's Agent will supply all figured dimensions omitted from the drawings.

The levels given on drainage/structural drawings are subject to confirmation on site, and the Contractor shall submit all levels to the Client's Agent for confirmation before he commences any structural construction work. The Contractor shall also check all clearances given on the drawings and shall inform the Client's Agent of any discrepancies.

C4.8	POWER SUPPLY AND OTHER SERVICES
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The Contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment will be made for the provision of electrical and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

The Contractor must liaise with the regional office of both Telkom and Eskom to confirm the position of all above and underground services, before commencing with the works.

Note should be taken of any Eskom restrictions on the supply of electricity as no claims in respect of power outages will apply.

C4.9 CONSTRUCTION IN RESTRICTED AREAS
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The Contractor shall adjust his rates accordingly as no further claims regarding restrictive work shall be entertained.

No additional payment will be made for work done in restricted areas. In certain places the width of the fill may decrease to zero and the working space may be confined. The method of construction in these confined areas largely depends on the Contractor's constructional plant.

The Contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions only, irrespective of the method used for achieving these cross-sections and dimensions and that the tendered rates and amounts shall include full compensation for all special equipment and construction methods and for all difficulties encountered when working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for additional payment be considered in such cases (these include but is not limited to COLTO items 42.12; 42.13; 42.14 and 42.16).

C4.10 CONTRACTOR'S CAMP SITE

The Contractor will make his own arrangements regarding the location of his camp site, housing for site staff and facilities for the Client's Agent. The Contractor will have to liaise with the local council and/or the local community to find a suitable site. The chosen site shall also be subject to the approval of the Client's Agent and the Environmental Control Officer (ECO).

Prior to the establishment of the construction site, the Contractor shall produce a plan showing the positions of all buildings, yards, vehicle wash areas, fuel storage areas and other infrastructure. This plan shall be subject to the approval of the Client's Agent and the Environmental Control Officer.

At the end of the contract, the site shall be restored as closely as possible to its natural state. The camp area shall be top-soiled and grassed.

C4.11 SECURITY

The Contractor shall be responsible for the security of his personnel and constructional plant on and around the site of the works and for the security of his camp, and no claims in this regard will be considered by the Employer. The Contractor will also be responsible for the

security of the areas around the Client's Agent's offices and the laboratories. The cost of security is deemed to be included in the rates for accommodation and offices.

C4.12 PROCESS AND ACCEPTANCE CONTROL

The Employer shall not pay claims for delays to the works resulting from the awaiting of test results. Testing in the combined laboratory will be effected as promptly as is reasonable but it is in the Contractor's own interest to submit material samples, concrete cubes or other components for testing in good time to assist avoiding or restricting delays.

The procedure for requests for testing, frequency of tests, testing and reporting of results will be finalised by the Client's Agent on site in collaboration with the Contractor.

C4.13 ENVIRONMENTAL MANAGEMENT

The Contractor will be responsible for managing a non-specific Environmental Management Plan (EMP), see Section F. The Environmental Management Programme Report (EMPR) is legally binding and shall be adhered to at all times.

The Contractor shall take the utmost care to minimise the impact of his establishment and other construction activities on the environment and shall adhere to the requirements. The Contractor will be required to submit a Method Statement to the Environmental Control Officer (ECO) detailing his construction activities and what measures will be implemented to prevent the pollution of streams, rivers and countryside through the spilling of fuels, bituminous binders, sewage from the temporary toilets and other deleterious materials. Where in the opinion of the Client's Agent, the Contractor has not adhered to these requirements; the Contractor shall rectify the damage at his cost and to the satisfaction of the Client's Agent.

C4.14 PROJECT LIAISON COMMITTEE (PLC)

A Project Liaison Committee (PLC) has been established to manage this project in accordance with the provisions of Part C3 Section E: Labour Specifications. The Contractor will have one senior member of his staff as representative on the PSC without any voting powers.

C4.15 COMMUNITY LIAISON OFFICER (CLO)

It will be required from the Contractor to employ a Community Liaison Officer (CLO) during the execution of the Works as specified in Part C3 Section E: Labour Specification of this Works Specification.

C4.16 PROMOTING SMALL, MEDIUM AND MICRO ENTERPRISES

C4.16.1 Small, Medium and Micro Enterprises (SMME's)

It is required that as much of the construction work as possible be undertaken by Small, Medium and Micro Enterprises (SMME's) qualifying as Affirmable Business Enterprises (ABE's). For this purpose, SMME's shall be employed wherever possible.

C.4.16.2 SMME Goal

Section G includes all the milestones and targets to be met by the Contractor, as well as his responsibilities with regard to the activities in co-operation with SMMEs. It is a requirement that a minimum of **20%** of the contract value be subcontracted to SMME contractors.

C.4.16.3 Local Resources Goal

The Contractor shall be required to utilise local resources in the execution of the works. Section G includes all the targets to be met by the Contractor, as well as his responsibilities with regard to the activities and expenditure on Local Resources. It is a requirement that a minimum of **5%** of the contract value be expended on local resources.

C4.17 UTILISATION OF LABOUR

C4.17.1 Targeted Labour

The targeted labour for the purpose of this project will be South African citizens who permanently reside within KSD..

The Contractor shall therefore employ labourers, artisans and subcontractors for the execution and completion of the Works from the local communities within the above target area in accordance with the provisions of Part C Section E: Labour Specifications

C.4.17.2 Local Labour Goal

The minimum local labour goal for this contract, as defined in Section E shall be **5.0%** of the award value excluding allowances for contingencies, Provisional sums, Contract Price Adjustment (CPA) and VAT.

Failure to comply to this minimum local labour goal will result in the payment of a penalty in accordance with subsubclause E1.4.5 in Section E of the Scope of Work.

If required, after consultation with the community, rotation of labour may be necessary. This will take place on a four to six month basis and will be confined to general labourers. This must be allowed for in the tender rates and no additional payments will be made.

The Contractor and his Sub-Contractors shall ensure that they enter into a Contract of Employment with each employee engaged on this Contract. A copy of the Contract of Employment completed for each employee engaged shall be given to the Client's Agent prior to their commencing work on this Contract.

Skilled workers and competent Sub-Contractors may only be recruited elsewhere if not available locally.

C4.1	RESTRICTIONS ON THE USE OF PERSONNEL IN THE PERMANENT EMPLOYMENT OF THE CONTRACTOR
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- (a) The Contractor shall limit the use of his permanently employed personnel to that of key personnel only (as defined in Section E of the Scope of Work) and shall, subject to the further provisions of Section E of the Scope of Work execute and complete the works using a temporary workforce working directly for the Contractor and/or for Sub-Contractors.
- (b) The Client's Agent may at his discretion, upon receipt of a written and fully motivated application from the Contractor and where he deems the circumstances to warrant authorize in writing that the Contractor may use workers not being his key personnel but who are in his permanent employ in the execution of the Works. Without limiting the generality of application of this sub clause, circumstances which may be considered by the Client's Agent to warrant the authorization of the use of the Contractor's permanent employees not being key personnel, include:
 - (i) The unavailability of sufficient numbers of temporary workers and/or Subcontractors to execute the Works, provided always that the Contractor has proved that he has exercised his best endeavours and taken all reasonable actions to recruit sufficient numbers of temporary workers and Subcontractors and has exhausted all reasonable recruitment options;
 - (ii) The unavailability within the temporary worker pool and/or Subcontractor sources available to the Contractor in terms of the Contract, or sufficient of the required knowledge and skills necessary for the execution of the Works or specific portions thereof, in cases where the time of completion allowed in the Contract is insufficient to facilitate the creation of the necessary skills through the provision of training as contemplated in this Contract; and
 - (iii) Any other circumstances, which the Client's Agent may deem as constituting a warrant.

C4.19	TRAINING
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Training of labourers employed locally shall be done strictly in accordance with the provisions of Section E of the Scope of Work.

C4.20 SAFETY

Refer to Section C in the Scope of Work in respect of Safety requirements for this Contract.

C4.21 AREAS AVAILABLE FOR TEMPORARY STOCKPILES

The areas within the road reserve (but outside the road prism) are available as temporary stockpile sites.

The Contractor may under his own initiative, identify additional sites, but no additional sites will be permitted unless approved under the Environmental Management Plan and by the Client's Agent.

C4.22 WASTE DISPOSAL SITES

The Contractor shall arrange his own waste disposal and shall ensure that he conforms to all relevant legislation and regulations which terms of compliance should be for the Contractor's cost. The site must be approved under the Environmental Management Plan and by the Client's Agent. All disposal costs will be borne by the Contractor.

The Environmental Management Plan may designate areas of erosion and old quarries in the proximity of the works as waste disposal sites.

C4.23 FAUNA AND FLORA

Indigenous fauna is limited to invertebrates (insects) and avifauna (birds). Domestic livestock that dominate the current fauna of the region includes pigs, donkeys, goats, cattle, sheep, dogs, ducks, geese and chickens.

The Contractor shall cause no damage to fauna and flora. If, in the opinion of the Client's Agent this happens, the Client's Agent is entitled to initiate prosecution by the relevant authorities.

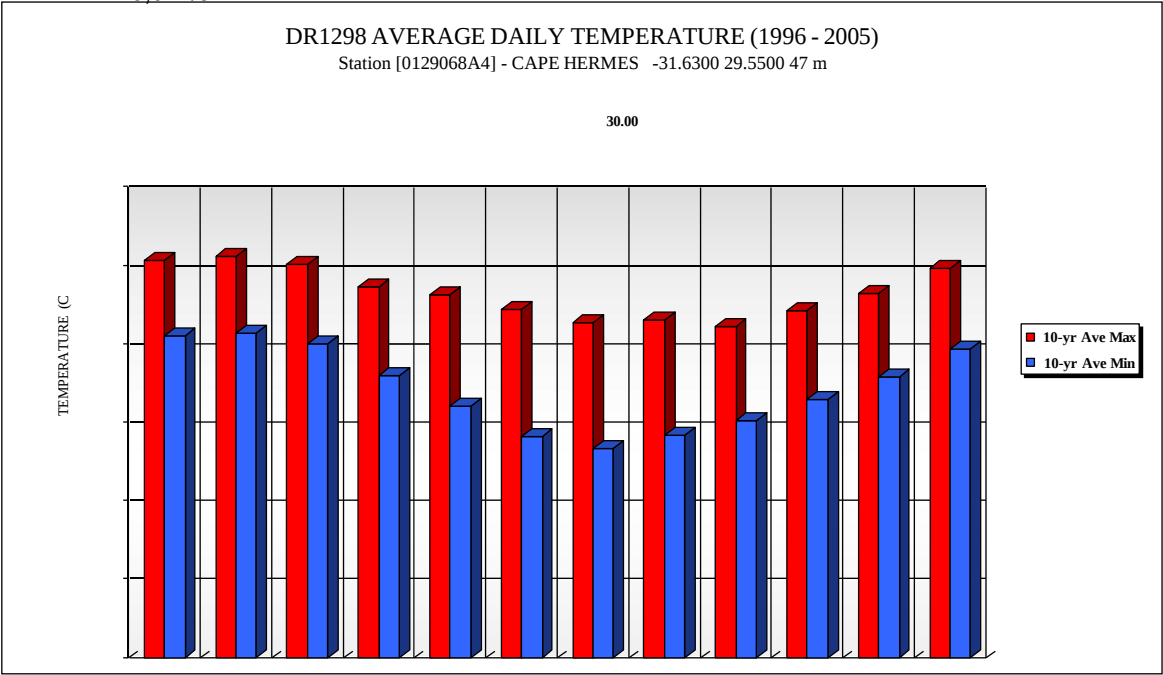
C4.24 CLIMATE**C4.24.1 Climatic Conditions**

The climate is typical of the Eastern Cape with mild summers and winters. There is a general drop in average temperatures for the months from April to October.

Average daily temperatures for Cape Hermes (Station [0129068A4] at Mthatha) indicate that maximum temperatures during the months from December to March are typically in the mid-twenties, with minimum temperatures in the mid-teens. The maximum temperature in the

months from May to November is typically in the low twenties and minimum temperatures are in the mid-teens.

The average daily temperature data for the period 1996 to 2005 at Cape Hermes is shown in Figure 4.9.1. Average measured wind speed for the period 1996 to 2005 at Cape Hermes is shown in Figure 4.9.1, indicating peak periods during summer months in the order of 7,0 to 8,0 m/s.



(b) **Figure 4.9.1 – Average Monthly Temperatures at Cape Hermes**
(c)

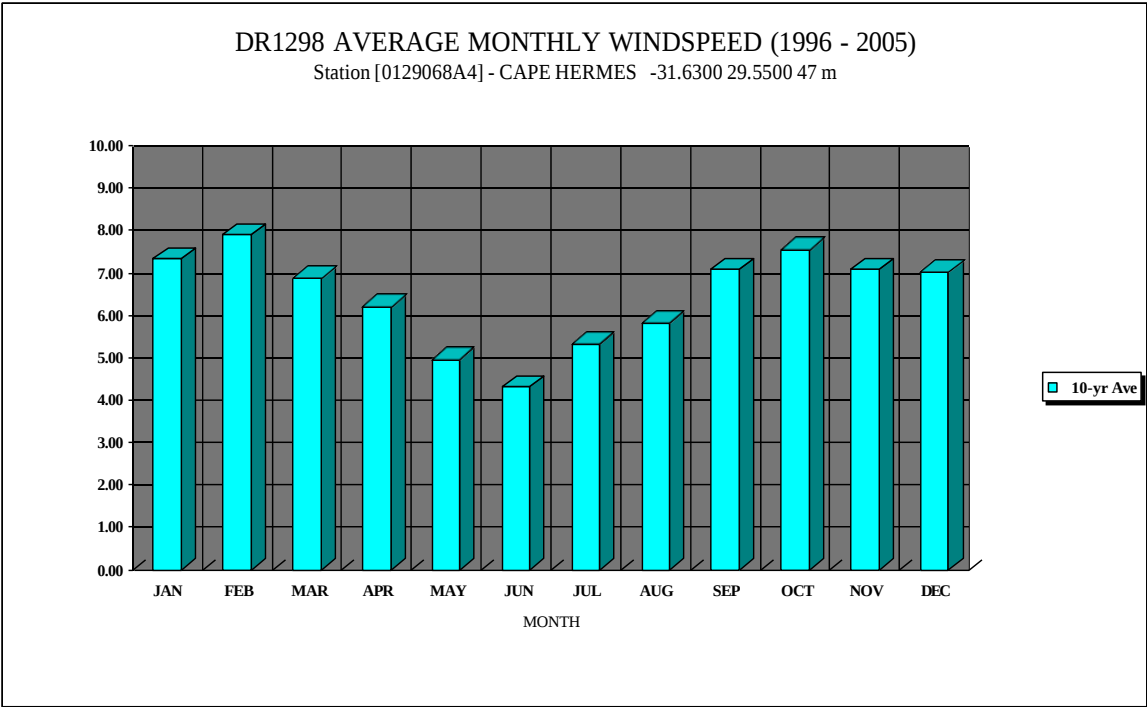


Figure 4.9.2 – Average Monthly Wind speed at Silaka nature reserve

The rainfall data indicates that rain occurs constantly throughout the year with a higher peak for the months from November to April.

The rainfall data shows a 10-year average of not less than 40 mm per month at Mthatha (Station [0129068 X]). The 10 year average rainfall at Silaka nature reserve (Station [0129007 4], approximately 20 km south east of Mthatha) shows the same pattern as Mthatha where the rainfall average peaks from November to April. The 10-year average annual rainfall at Mthatha and Silaka is 1156 mm and 1648 mm respectively.

The average monthly rainfall data for Mthatha (Station [0129068 X])during the period from 1996 to 2005 is shown in Figure 4.9.34.9.1, while Figure 44.9.4 shows similar data for the period 1996 to 2005 at Silaka nature reserve (Station [0129007 4]).

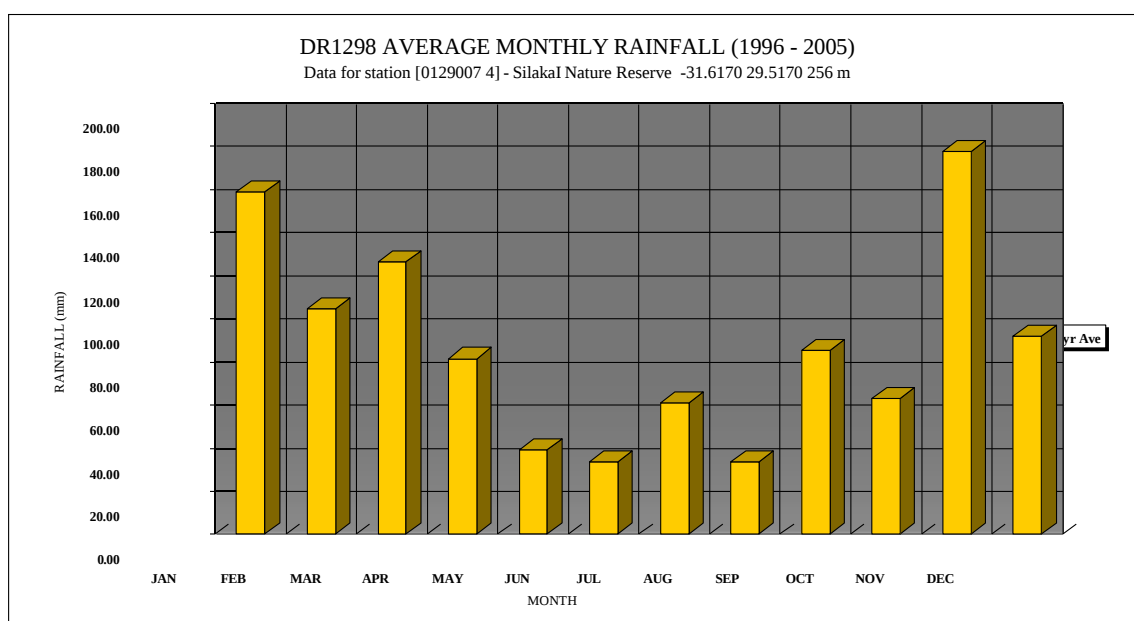
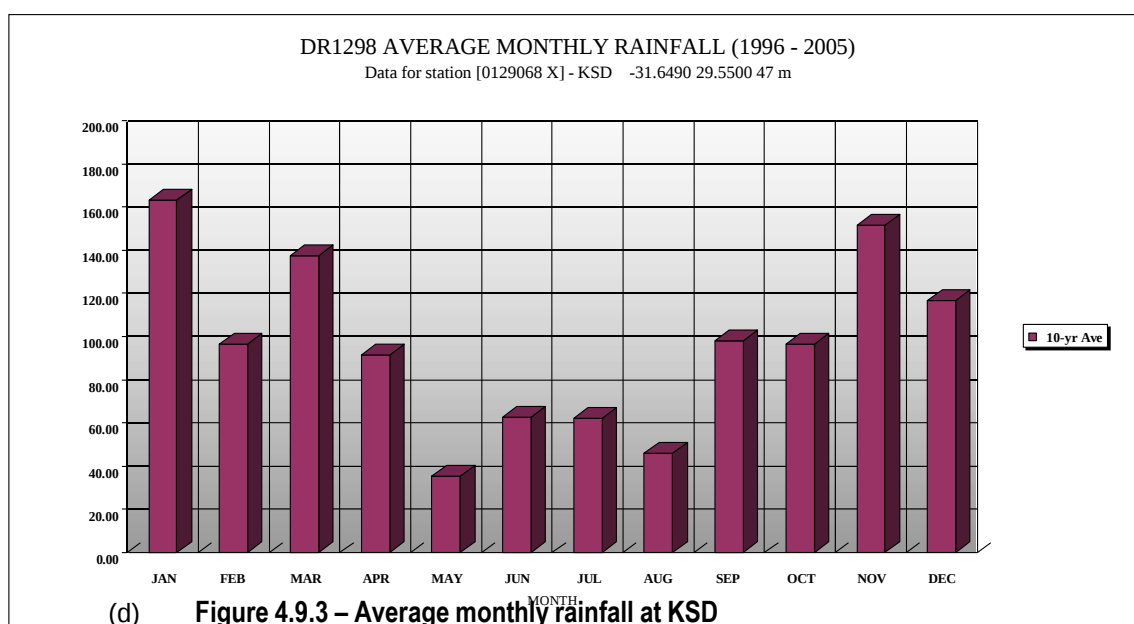


Figure 4.9.5 details Silaka's monthly rainfall records over the period 1923 – 2008. Note that 24-hour maximum rainfall in a few months exceeds 200 mm.

TENDER DRAWINGS



BLOW THE WHISTLE



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THE MATTER WILL BE TREATED PRIVATE AND CONFIDENTIAL

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